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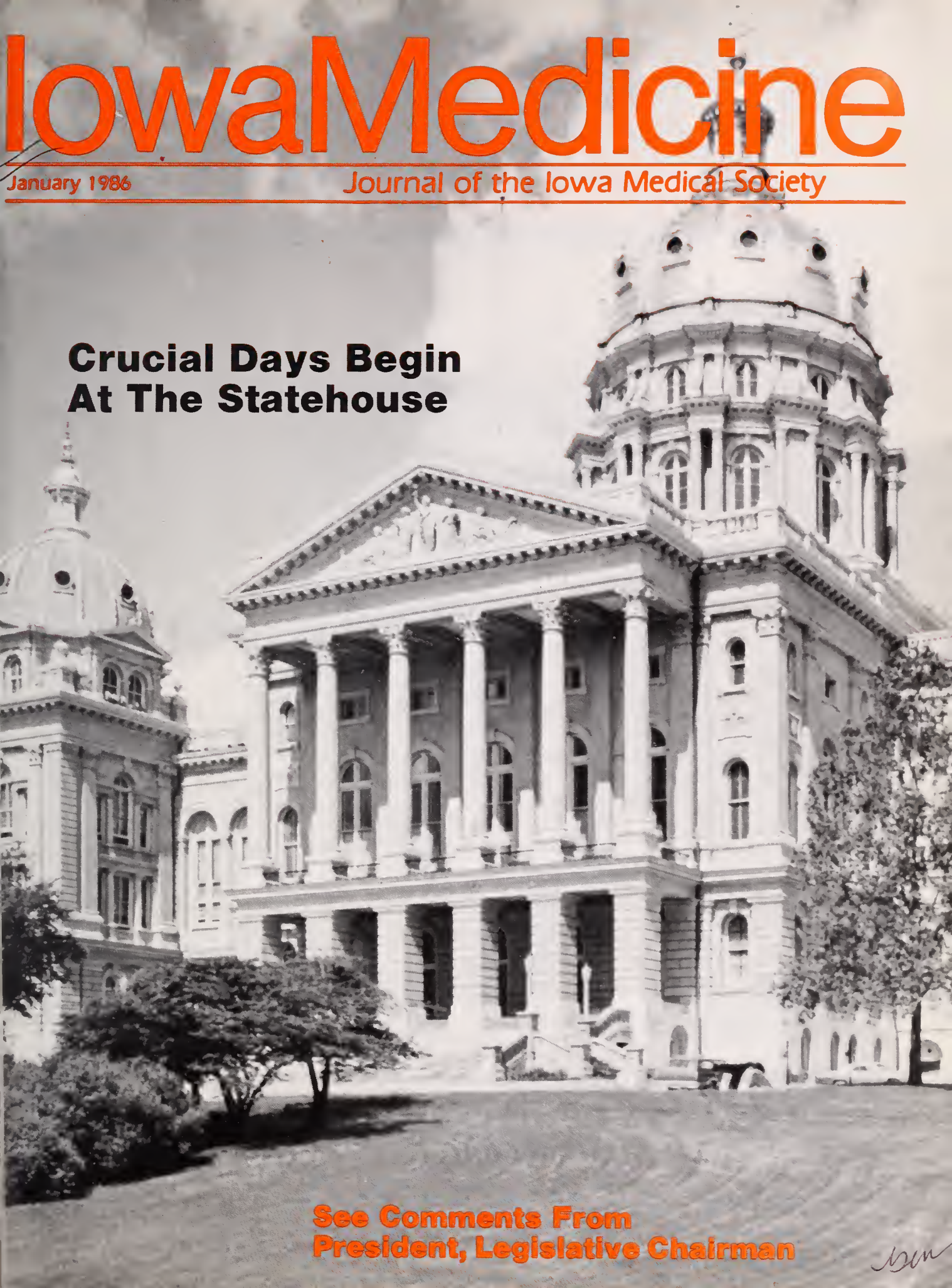
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IowaMedicine

January 1986

Journal of the Iowa Medical Society

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January 1986

IowaMedicine

Volume 76 Number 1

Journal of the Iowa Medical Society

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ABOUT THE COVER



ABOUT THE COVER — Iowa physicians' growing concern over medical liability may soon be in the spotlight. Monday, January 13, marks the opening of the second session of the 71st Iowa General Assembly. Though there are many weighty issues facing lawmakers, the IMS and other groups are hopeful the medical liability crisis will be addressed during this session. In this issue, IMS President, Emmett B. Mathiasen, M.D. and Legislative Chairman, Clarence H. Denser, Jr., M.D., comment on the upcoming crucial days at the Statehouse.

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-8709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: $15 per year. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

NATIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 South Blvd., Oak Park, Ill. 60302. Phone 312/383-BB00

IOWA ADVERTISING: Contact Mrs. Polly Lynch, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265. Phone 515/223-1401

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UPDATE ON ABDOMINAL PAIN

FEBRUARY 12, 1986

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PRESIDENT'S PRIVILEGE



THE GAVEL SOUNDS

THE NEW YEAR means resumption of the formal legislative process. While time between legislative sessions is well used, the real action commences each January.

Our Iowa Constitution assigns legislative responsibility to a General Assembly. As elected by the populace, this General Assembly is composed of 50 senators and 100 representatives.

We have 3 special elections pending as this is written. Presumably, 150 legislative seats will be filled on Monday, January 13, when the second session of the 71st biennium begins. No precise adjournment date is prescribed; however, the lawmakers are paid only for 100 days.

Most state legislative sessions are characterized beforehand as extremely crucial to the current and future well-being of our population. This comment is perhaps as appropriate as it ever has been. Veteran Iowans will be hard pressed to recall personally any more economically unsettling time in our history. We need to press forward in our quest for economic resurgence. We must study the down-sizing of government to retain essential service and encourage efficiency — all this with a view to holding taxes in check as much as possible.

The issue of liability, of course, is uppermost in the minds of many concerned Iowans, not just physicians. As a medical profession, we have stated our belief that the time has come for Iowa to modernize its tort statutes to assure fairness as fully as possible (a) to any wrongfully injured person, and (b) to society in general.

As this issue and the other vital ones come before our legislators in the coming weeks, it is imperative that Iowa physicians (a) take a broad and genuine interest in the state's economic condition, and (b) make a concentrated effort to facilitate consideration of medical liability reform. Good citizens are active and informed. They function as constituents. As such, we must accelerate our efforts significantly in the coming months; we must persuade individual lawmakers to the merits of our case.

We applaud our state legislators for their willingness to serve. We pledge our support of their deliberations.

Emmett B. Mathiasen, M.D.
President

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Clarence H. Denser, Jr., M.D.

QUESTIONS AND ANSWERS



Liability Considerations Top IMS Priority

IMS efforts to reform the tort liability system will begin in earnest when the Iowa General Assembly convenes this month. Clarence H. Denser, Jr., M.D., a Des Moines pathologist, is chairman of the IMS Committee on Legislation.

How would you assess the chances for passage of the IMS liability reform package in 1986?

Basically, it depends on how active Iowa physicians are at the grass roots level. Success hinges on physician efforts to persuade community leaders, the media and their legislators of the severity of the liability problem and the validity of our proposed solutions.

What sense of legislator attitude did you gather from the recent IMS-sponsored legislative briefings held around Iowa?

There is much concern as to the condition of the state budget. There is significant interest in government reorganization. These 2 issues are likely to be in the forefront of legislative consideration in 1986.

However, without exception legislators know of the tort liability concerns of many groups, including the IMS. While they may not agree with all the Society's proposed solutions, they do recognize a problem exists.

What is apt to be the strategy of plaintiff attorneys in opposing liability reform?

In traveling the state this past fall, I've learned nearly all legislators have been contacted by the plaintiff's bar — some more than once. The legislators are being told insurance companies are responsible for the medical liability situation in Iowa.

Plaintiff's attorneys also allege physician peer review is incestuous and medical discipline is inadequate. Generally, their appeals are based on the emotionally-charged argument that proposed tort reforms may restrict the injured individual's ability to obtain recompense.

In your October 13 address to the House of Delegates, you stressed one-to-one contact between physicians and their legislators. Can you advise physicians on how to establish good ongoing relationships?

The first step is to meet and become acquainted with your legislator on a personal, first-name basis. The better they know you, the more credibility you will have. It's as simple as picking up the phone and asking your legislator to join you for coffee or lunch.

In addition to physicians, many other groups are concerned about the liability problem. What impact might their legislative efforts have on the IMS plan for liability reform?

The involvement of other groups in tort liability issues will have a favorable impact because it brings the severity of the problem to the attention of the public. The IMS is working with other groups interested in tort liability reform. A statewide coalition of groups interested in helping each other has been formed. Physicians are encouraged to work on the local level with groups or individuals concerned about the liability climate.

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Adrenal Cortical Carcinoma

PETER BANITT and
WILLIAM R. BLISS, M.D.
Ames, Iowa

Two cases of adrenal cortical carcinoma are reported. One, a rare tumor, is unusual because of bilateral involvement and uncommon metastases. The tumors were non-functional; therefore, they did not become evident until they reached an advanced state and were no longer resectable.

CANCER of the adrenal cortex is rare. Recent estimates suggest there are approximately 130 new cases of adrenal cortical carcinoma each year or 0.5 cases/10^6 population; this accounts for 0.2% of all cancer deaths.[1] Of these cases, approximately 10% have bilateral involvement. We report 2 cases of adrenal cortical carcinoma, one having had bilateral involvement with unusual metastases. These were seen at this medical center within the past 2 years.

Case Number One

A 57-year-old white male presented with a history of abdominal pain and an elevated white count. In addition, he reported severe and steady right upper quadrant pain. His temperature was 100.8. Ultrasound exam showed a normal gallbladder and biliary tree, but also revealed a 6-7 cm mass in the right upper quadrant. Computerized tomography showed both adrenal glands to be markedly enlarged, the left 6 cm and the right 8 cm in maximum diameter. They were composed of non-cystic heterogeneous tissue. The study also demonstrated an abdominal aortic aneurysm 6.2 cm at its largest diameter. The liver and kidneys appeared normal. A barium enema, electrocardiogram and chest x-ray were normal.

Metabolic studies showed the blood cortisol level normal. The 24-hour urine levels of total catecholamines and 17-ketosteroids were also normal. The following 24-hour urine levels were slightly elevated; 17-ketogenic steroids were 23.3 mg/day; the metanephrines were 1.7 mg/day; the vanillymandelic acid was 18 mg/day, and 17-hydroxycorticosteroids were 16.1 mg/day. Since the patient had not been hypertensive and because the studies were only slightly elevated, the tumor was presumed to be non-hormone secreting. Since only some of the studies were slightly elevated and the patient had never been hypertensive, a non-hyper-secreting tumor was presumed.

Mr. Banitt is a student at the University of Iowa College of Medicine. Dr. Bliss is a general surgeon associated with the McFarland Clinic in Ames, Iowa.

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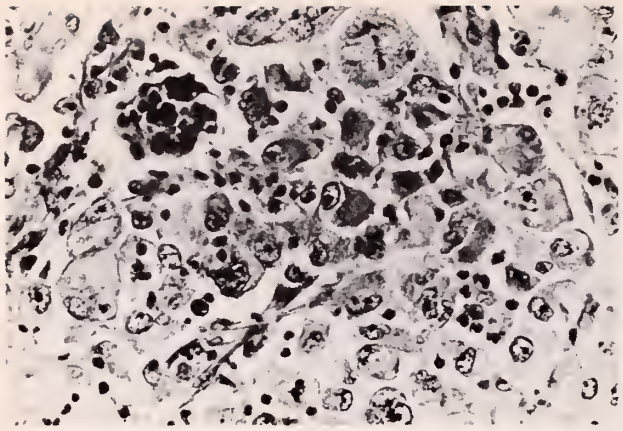


Figure 1. Histologic section of the tumor from Case Number One shows a large cell poorly differentiated carcinoma of adrenal cortical origin.

At surgery the patient was found to have tumors involving both adrenal glands. Both adrenals were firm and identically enlarged. Multiple metastatic lesions were also found in the wall of the jejunum. The proximal jejunum was resected because several lesions involved the entire bowel wall and one had produced a localized perforation with attachment to the retroperitoneal tissue.

Biopsy of the adrenal gland and the jejunum revealed histologically similar tumors. They were evaluated as poorly differentiated neoplasms consisting of very large, very undifferentiated cells (Figure 1). This was believed to be a highly undifferentiated carcinoma originating from the adrenal cortex with metastases to the proximal jejunum. Despite chemotherapy and supportive measures, the patient deteriorated rapidly and died 6 weeks postoperatively.

Case Number Two

A 74-year-old white male reported 3 months of increasing anorexia and vague abdominal pain. The patient had a history of spondylitis and had been hospitalized for 3 weeks with this problem one year previously.

Laboratory tests showed a blood urea nitrogen of 45 mg/100ml; creatinine of 1.9 mg/100ml; potassium of 6.8 mEq/L, and an alkaline phosphatase of 135 IU/L. The remainder of the SMAC exam was essentially normal. The electrolyte problems were corrected, and an extensive evaluation was made to determine the cause of the anorexia and pain.

X-ray films showed narrowing of the L2-3 disk space with some irregularity of the vertebrae superiorly and inferiorly. This space was aspirated, but the Gram stain and culture were both negative. An upper gastrointestinal series, oral cholecystogram, barium enema, and x-ray of the abdomen were all normal. A slightly elevated right hemidiaphragm was revealed by an x-ray of the chest.

A computerized tomographic scan demonstrated a large mass posteriorly in the region of the caudad lobe of the liver. It had both solid and cystic components and measured up to 7 cm in diameter. A saggital reconstruction showed the mass just anterior to the right kidney; there also appeared to be renal vein involvement.

At surgery a large mass was found in the area of the right adrenal gland which extended throughout the region involving the perinephric tissue and renal vessels. Lymph nodes removed at the time showed metastatic tumor cells. Due to this finding a resection of the vena cava was not considered appropriate. Therefore, half of the mass, the involved right kidney, and renal vessels were removed.

A biopsy of the mass and a regional lymph node showed both to contain extensive hemorrhagic necrosis with highly malignant giant cells. There were also scattered, very atypical mitoses and many large eosinophilic nucleoli consistent with a carcinoma of adrenal cortical origin.

In view of the grave prognosis, the patient chose only supportive therapy. Four weeks after surgery another CT scan showed possible extended vena caval involvement from the right atrium to the level of the iliac crest. The scan also showed that although half of the mass was removed in surgery, it had grown back to 7 cm in diameter. The carcinoma continued to metastasize, and 2 weeks later the patient died of renal failure and consumption coagulopathy.

Discussion

Interestingly, the character of this tumor tends to vary somewhat with the age and sex of the patient. In children these cancers frequently present at an earlier stage because they are usually functional and produce Cushing's syndrome or virilization. However, in the adult the presenting signs and symptoms are varied or non-existent. Those most frequently re-

ported are an abdominal mass, abdominal pain, loss of weight, or fever.[2]

In adults these tumors are functional in approximately 70% of women, but in only 30% of men.[3] In addition, the tumors in the male population tend to occur at a slightly older age and appear to be less differentiated and more anaplastic. Most tumors of this type are diagnosed in patients in their 5th-7th decade.[4] In the male population these tumors usually present with either widespread or locally unresectable disease and the prognosis is extremely poor.

Arteriography and the intravenous pyelogram are the most helpful diagnostic tools to identifying adrenal cortical carcinoma and to determine the tumor's location and extent of vascularization. However, other noninvasive techniques such as the radiocholesterol scan, sonography and computerized tomography can also show location, extent of invasion (including contralateral involvement), and the presence of metastases.

Since the adrenal gland is located in a well-protected and largely inaccessible location, the disease is often well advanced by the time of diagnosis. In some studies over half of the patients with adrenal cortical carcinoma had metastases at the time of diagnosis, with the most common locations being the local lymph nodes, lung, and liver.[5] Currently the en bloc dissection of the tumor and involved adjacent organs provides the best chance of cure.

Since nephrectomy is often necessary, bilateral renal function should be established pre-operatively. Both radiation therapy and chemotherapy have received mixed reviews. The most widely used chemotherapeutic agent, Op'-DDD (Mitotane), has been shown to be of some help in steroid suppression and tumor regression, but its high incidence of toxicity and low response rate preclude its universal use.

Although adrenal cortical carcinoma is rare, these 2 cases at this medical center demonstrate that it is a distinct possibility. In patients over 40 years of age with abdominal pain, loss of weight or fever of unknown origin, the possibility of adrenal cortical carcinoma should be considered.

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WORK ON LIABILITY REFORM

Iowa Medical Society member physicians are reminded of the recent appointment of William Hedlund and Rebecca Roorda to the IMS administrative staff as public affairs representatives. Both Hedlund and Roorda have valuable legislative experience.

Hedlund served from 1964 to 1972 as an aide to former Governor and U.S. Senator Harold Hughes. Most recently employed as a lobbyist for Campbell and Associates, Hedlund operated his own business for 12 years.

Roorda has been a research analyst for the Iowa Senate. She has worked closely with legislators and their constituents for 6 years.



Rebecca Roorda



William Hedlund

Hedlund and Roorda are devoting themselves essentially to the medical liability reform program. They are contacting physician leaders at the community level to organize physician action teams. Hedlund is assigned to western Iowa and Roorda to eastern Iowa. They will spend a major portion of their time at the Iowa Statehouse as the General Assembly convenes.

Life-Threatening Vaginal Hemorrhage From Coital Trauma

DAVID H. CHESTNUT, M.D., and
W. ALLEN ADDISON, M.D.

Coital injury to the vaginal vault may infrequently produce life-threatening hemorrhage. It should be considered when heavy vaginal bleeding occurs. Effective use is made in this case report of the medical antishock garment to promote patient stabilization prior to surgical repair.

HYMENAL LACERATIONS are not uncommon with first intercourse. However, coital injuries to the vaginal vault are distinctly uncommon. In this report the patient experienced each of these coital injuries, the second resulting in life-threatening hemorrhage. Our objective by reporting this case is to remind readers (a) that coital trauma can result in severe hemorrhage, requiring prompt intervention,[1, 2] and (b) that there may be a dual benefit in use of the antishock garment to manage a patient with such hemorrhage.

Case Report

A 25-year old black female experienced heavy vaginal bleeding after first intercourse. Examination revealed a large hymenal tear which required hemostatic sutures. The patient did not engage in coitus again until one year later, at which time there was profuse vaginal bleeding after coitus with a new consort. Emergency medical technicians found the patient without palpable blood pressure. Medical antishock trousers were applied and inflated. Systolic blood pressure was then palpable at 60 mmHg. Crystalloid resuscitation was initiated.

Blood pressure was 92/50 in the emergency room; the pulse was 112. The patient denied vaginal instrumentation. After stabilization to a systolic blood pressure of 110 mmHg, the abdominal section of the antishock trousers was deflated to permit digital vaginal examination. The only palpable abnormality was a large tear in the vaginal mucosa of the left lateral fornix. Profuse vaginal bleeding recurred during this time. After one minute of deflation, the systolic blood pressure had dropped to 90 mmHg; the abdominal section was therefore re-inflated and hemorrhage was again controlled. The patient received 3,000 ml of crystalloid and 2 units of packed red cells and was taken to the operating room.

AFTER A RAPID sequence induction of general anesthesia with ketamine, the antishock garment was gradually deflated and removed. The patient was placed in the dorsal lithotomy position. Exposure permitted visualization of the vaginal laceration extending around the cervix posteriorly over 180 degrees from one lateral fornix to the other, with the heaviest bleeding immediately posterior to the cervix. The peritoneal cavity had not been entered. The laceration was closed with run-

Dr. Chestnut is an assistant professor associated with the Departments of Obstetrics and Gynecology and Anesthesia at the University of Iowa. Dr. Addison is an associate professor in the Department of Obstetrics and Gynecology at Duke University, Durham, North Carolina; he is director, Division of Gynecology.

ning interlocking # 1 Vicryl suture. Perioperatively, the patient received 4 units of packed red cells. A subsequent hematocrit was 27.5%. The patient was discharged on the fourth postoperative day, but was readmitted 3 weeks postoperatively because of bright vaginal bleeding requiring additional hemostatic sutures in the operating room. The patient reported doing well 2 months later, but declined examination or referral.

Discussion

This patient was without obvious predisposing risk factors for significant vaginal vault trauma.[3, 4, 5] She was not prepubescent, virginal, pregnant, puerperal or postmenopausal. Her vagina was not anomalous, and she had not had previous surgery or irradiation. While she was not the victim of rape, it is possible that psychological factors, including trauma associated with her first coital encounter, interfered with her ability to achieve adequate arousal, lubrication and upper vaginal expansion. Smith *et al* have recently reported an increased risk of coital injury in women who resume coitus after a prolonged period of abstinence,[6] as was true with this patient. In a series of 19 patients with coital injuries, these authors emphasized the high frequency of initially incorrect diagnosis of the etiology of the vaginal bleeding.

Previous reports have identified the posterior and lateral fornices as the most common sites of coital vaginal vault injuries.[2, 3, 4, 7] The possibility of retroperitoneal and intraperitoneal hemorrhage must be remembered when dealing with such an injury. Regardless, we believe repair of vaginal vault trauma should always be performed with adequate anesthesia in the operating room.

The magnitude of hemorrhage after this vaginal injury was indicated by the severity of hypovolemic shock observed and the persistent anemia after transfusion. The medical antishock trousers were helpful in resuscitation of the patient, both by providing an immediate augmentation of central blood volume and by actually providing hemostasis while the garment was inflated. It is common knowledge that inflation of the antishock garment may result in an almost instantaneous autotransfusion of 500 to 1000 ml from the peripheral to the central vascular compartment. It is less well known that the circumferential pneumatic compression may actually result in diminution of bleeding.[8, 9] The garment effects an increase in external pressure, resulting both in lower vascular transmural pressure and decreased vascular wall tension. This reduction in wall tension may be sufficient to allow reapproximation of the edges of the vascular wound. Additionally, the radius of the vessel is decreased, and, following the equation of Poiseuille, blood flow is thereby decreased to the fourth power of the reduction of the radius. Indeed minimal bleeding occurred in the 90 minutes the garment was inflated on this patient, allowing crystalloid resuscitation and the initiation of transfusions with cross-matched blood prior to induction of anesthesia.

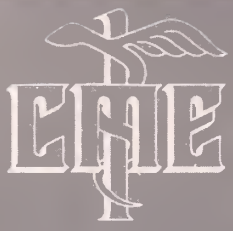
There is little in the literature on use of the antishock garment in obstetric and gynecologic patients. Hall and Marshall reported on the effective use of the antigravity garment in the preoperative resuscitation of 4 hypotensive patients with ruptured tubal pregnancies.[10] Gardner *et al* first reported the use of the antigravity garment to aid in control of persistent hemorrhage after postpartum hysterectomy for placenta percreta.[11] Sandberg and Pelligra recently reported 3 cases of abdominal pregnancy with surgically uncontrollable bleeding wherein control was achieved by application and inflation of the antishock garment.[9] We believe this is the first reported case of coital trauma in which the dual usefulness of the antishock garment has been described.

Summary

Coital injury to the vaginal vault may infrequently result in life-threatening hemorrhage and should be included in the differential diagnosis of heavy vaginal bleeding, even in the absence of obvious predisposing factors. Such injury is best repaired with adequate anesthesia in the operating room. The medical antishock garment may be dually useful in managing a patient with such hemorrhage, both in aiding immediate resuscitation and in providing temporary hemostasis until definitive surgical repair can be accomplished.

References

The references noted in this paper are available on request either from the authors or from IOWA MEDICINE.



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Mar 25th	Hypertension Symposium
Apr 4th - 5th	Eye Enucleation
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14th - 15th	Annual Ophthalmology: Current Concepts in Refractive Surgery
17th - 20th	Migrant Health Conference
21st - 25th	Workshop on Fine Needle Aspiration Cytology
25th - 26th	Adolescent Health Program: Gay Youth
28th - May 2nd	Family Practice Review: Update 1986

MAY - JULY

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7th - 9th	44th Annual Course in Allergy and Clinical Immunology
14th - 15th	Human Aging IX: Health Maintenance and Wellness
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June 4th	Options in Cardiovascular Medicine
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13th - 14th	Hospital Nutrition Support
18th - 21st	50th Annual Surgery Course: Advances in Trauma and Critical Care Surgery
25th - 27th	Topics and Advances in Pediatrics
July 7th - 9th	Orthopaedic Surgery: Shoulder
24th - 25th	Symposium on Nuclear Medicine

SEPTEMBER - OCTOBER

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26th - 27th	Adolescent Medicine Conference: High Risk Youth
Oct 1st - 3rd	Annual Internal Medicine Review
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22nd - 24th	Obstetrics & Gynecology Annual Autumn Seminar
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Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



ANOTHER NEW YEAR

Ring out, wild bells, to the wild sky,
The flying cloud, the frosty light;
The year is dying in the night,
Ring out, wild bells, and let him die.

Ring out the old, ring in the new,
Ring happy bells, across the snow;
The year is going, let him go,
Ring out the false, ring in the true.
— TENNYSON (1809-1892)

EVERY 12 months comes this time of renewal. A year has lapsed; the door to the future opens on 1986. We reflect on both accomplishments and failures. As we assess the year past, we look to the future with renewed vigor and hope. Out of our accomplishments and failures we set new goals and make new plans.

The past year has been busy for Iowa medicine. Our Iowa Medical Society has ventured into new areas on behalf of our profession.

Foremost has been our concern about malpractice lawsuits, with the resulting high liability insurance premiums. This problem has been thrust into the media limelight. A recent issue (December 6, 1985) of USA TODAY devoted its entire editorial page to this question. Columnists presented opposing views. The editor's final statement concludes thus: "If the USA's health care system is to survive this crisis, then the high cost of malpractice must be cured. And that means lawyers' fees must go under the knife."

Medicine fully supports the right of an injured person to seek redress, whether the injury stems from a defective machine in a factory, a malfunctioning household appliance, or from the acts of another person. If a physician is responsible for the injury, so be it. Mistakes occur. Yet some misfortune is uncontrollable. A major contention in medical liability however, is over the matter of compensation for the injured victim. Awards from the courts may seem high, and *they are*. And the victim must share a generous portion of any monetary award with the lawyer. The lawyer gambles that the settlement will be personally rewarding. If he can convince a jury or judge of his point of view, the reward can be great — one-third or more of the judgment. That is how our system works. However, the question of fairness is mounting. Hopefully, clear minds on both sides of the debate will conclude equitably for the benefit of society as a whole. It is society that ultimately pays the price, and the price is soaring alarmingly. The system must undergo realistic unbiased scrutiny if this social dilemma is to be overcome. Deliberations in 1986 will be intense.

The provision of alternate health care payment plans has been another concern for our profession. In the past year, we have seen a proliferation of HMO, PPO, and similar health care plans. For some, these are good; for others, they are chaotic. Preventive medicine is the popular theme of these plans. Total care is another theme. Some patients are happy with them; others disillusioned. Some physicians are happy; others are discouraged or totally against the principles represented.

OLDER PHYSICIANS find it difficult to break away from the direct doctor-patient relationship in the payment for services. Blue Shield had its acceptance problems many years ago. Some physicians still prefer to be "nonparticipating." So it is with all the new payment concepts — some are so complex with capitation rates varied for different ages; rates of co-payment different for each contract, and the endless paper work with all of them. The coming year will see new plans; physicians will need to accept or reject them. Each will have its

(Please turn to page 16)

COMMENTING EDITORIALLY

(Continued from page 15)

unique twist. Complexity in the business of medicine will increase.

The most exciting part of medicine is the progress in diagnosis and treatment. There is excitement over new techniques and drugs. The new year will continue to be exhilarating; our knowledge and capacity to serve are ever-expanding. Research has continued to add years to the life span of patients. Let us hope the lives we prolong will retain their usefulness and quality. Our profession must use its skills to provide health care at its fullest measure. Being alive is one thing; living a good happy life is another. When our actions help provide happiness for a substantial number of persons our labors are worthwhile. To that end we physicians shall enter the new year committed to providing the best we can for our patients. The love we give in our ministering to the ill will be returned in their gratitude for our efforts. Bernard Shaw in Candida, expressed this sentiment thusly "You have no more right to consume happiness without producing it than to consume wealth without producing it."

The New Year is upon us. Our efforts in 1986 need to be conscientious. In all that we do we must seek the respect of our patients. — M.E.A.

IOWA CLINICAL SURGICAL SOCIETY — 1927-1985

THIS FRATERNITY OF SURGEONS emerged in 1927 with Donald MacRae of Council Bluffs as its first president. It welcomed surgeons of all persuasions and became a robust, growing organization with 2 popular meetings each year. The spring meetings rotated among cities in Iowa where local members presented clinics and demonstrations in their own hospitals. University centers were the usual fall meeting sites with faculty programs.

A football joust was usually associated with the fall meeting. The evening before each meeting, a Smoker brought about jousts of another kind on a round playing surface across which modest sums of money changed hands. With its mixture of educational and social contacts, the Society nurtured friendships among colleagues all across the state.

However, inexorable change moved across the scene. Surgical specialists formed their own societies which tended to supplant this one. Attendance at ICSS meetings began to fall away, gradually, then precipitiously. Even strenuous efforts to reverse the trend appeared fruitless; a poll of the membership revealed a majority of those who believed the same. The sentiment expressed, regretfully and rather wistfully, was that the Society had outlived its usefulness and should be allowed to expire.

The office of the Secretary of State of Iowa held no record of incorporation hence no formal dissolution is necessary.

Some $6,700 remained in the Society's treasury. The poll showed support for devoting these funds to medical student loans. The Iowa Medical Foundation (not to be confused with the Iowa Foundation for Medical Care) has accepted the money and will maintain the identity of the ICSS donation for a stipulated 5 years, using interest income for loans. After this interval the money will be absorbed into the Foundation general loan fund which appears to be a reasonable procedure.

We thank IOWA MEDICINE for helping us convey this information to ICSS members and the profession at large. So the deed is done and the surviving officers named here declare their responsibilities at an end. With some wistfulness we watch the Iowa Clinical Surgical Society fade into the sunset. — *James F. Bishop, M.D., president, Davenport, and John M. Syverud, M.D., secretary-treasurer, Davenport.*

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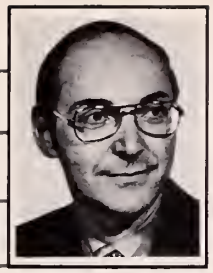
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



ONE SNAKE OR TWO?

In a recent brief essay published in JAMA, Dr. Robert Rakel, until recently the head of the Department of Family Practice at the University of Iowa, outlined the history of the caduceus with its two snakes and contrasted it with the staff of Aesculapius with its single snake. He concluded with a plea that medical people use the staff of Aesculapius and quotes the Encyclopedia Britannica, *"This staff is the only true symbol of medicine."*

The two-snake caduceus represents the staff of Hermes, or Mercury in his Roman incarnation. The word caduceus is derived from a Greek word meaning "Herald's wand." The caduceus, in contrast to the staff of Aesculapius, is recent as a medical symbol, apparently having begun in 1856 when it was chosen by the U.S. Marine Hospital Service as a way of marking members of the medical corps to indicate their noncombatant nature. It was then adopted in 1871 as a symbol of the Public Health Service and in 1902 by the U.S. Army Medical Corps.

"The two-snake caduceus represents the staff of Hermes, or Mercury in his Roman incarnation. The word caduceus is derived from a Greek word meaning "Herald's wand."

I'm not sure how you feel about snakes in general. Most people in our society seem to have a distinctly negative sentiment about them even though, according to the books, the snake is supposed to represent wisdom, learning and fertility. The shedding of its skin has implied the restoration of health and longevity. I rather suspect those positive features are overshadowed by the enormous importance of the serpent as the villainous creature in the Garden of Eden.

"I'm not sure how you feel about snakes in general. Most people in our society seem to have a distinctly negative sentiment about them even though, according to the books, the snake is supposed to represent wisdom, learning and fertility."

Hermes was traditionally counted as a god of commerce, and usually depicted holding or carrying a full purse. He was also considered the patron protector of thieves, harlots and outlaws, perhaps because he was considered to be especially cunning and crafty. He was also acknowledged as the god of dreams, magic and sleep, who conducts departed souls to Hades, an activity that Dr. Rakel considers singularly unsuitable to be associated with physicians.

I agree with Dr. Rakel's view about the caduceus and his reasons. I feel more than a little uneasy, though, about the "mercantilism of medicine" currently underway, and the unmistakable evidence of medicine's becoming more openly an activity to be categorized as a business rather than an altruistic, learned profession. Maybe we're entering a time when a great many people, including physicians, may forget entirely the historical and symbolic significance of Aesculapius and his staff, and come to think that the staff of Hermes/Mercury is a precisely appropriate one for medicine and its practitioners. I earnestly hope it may not prove so.

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.



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PEOPLES DRUG

Recent Highlights

U. OF I. COLLEGE OF MEDICINE

PETER JOCHIMSEN, *Surgical Oncology, is coordinating a clinical trial at the UI on the use of a low-fat diet as a possible alternative to chemotherapy for some women who have had breast cancer. This trial is based on studies which show that high levels of fat in the diet are associated with increased rates of breast cancer. A recent consensus conference in Washington, D.C., on chemotherapy and breast cancer concluded that while chemotherapy can be effective in premenopausal women, the advantage for these women is not nearly so clear. The conference also encouraged clinical trials of possible alternatives to chemotherapy. The UI is one of eight centers participating in the Nutrition Adjuvant Study, funded by the National Cancer Institute.*

AN IMPORTANT CONNECTION BETWEEN TWO NUTRIENTS *— and their effects on osteoporosis and blood pressure in older women — has been reported by UI College of Medicine researchers. MaryFran Sowers, Preventive Medicine and Environmental Health, found in 2 studies of women between ages 55 and 80 that women with adequate intakes of calcium and vitamin D had significantly lower blood pressure than women whose daily intake of these nutrients did not meet the Recommended Dietary Allowance. Sowers and her colleagues also found women with adequate dietary intakes of vitamin D, combined with calcium, sustained less bone loss than did women whose daily intake did not meet the RDA. These UI studies were published in the May and July issues of The American Journal of Clinical Nutrition.*

THE UI'S ANIMAL CARE FACILITIES *have received a one-year, $600,000 Animal Resources Improvement Award from the Division of Research Resources of the National Institutes of Health. The grant is the fifth largest in the nation and will enable the UI to continue its 6-year program of upgrading its animal research facilities. Paul S. Cooper is the university veterinarian and director of the UI Animal Care Unit.*

BRAIN SCAN FINDINGS *by Nancy Andreasen, Psychiatry, could offer a key to understanding the causes of schizophrenia. Using magnetic resonance imaging, Andreasen found that patients with schizophrenia not only have smaller frontal brain regions than normal study participants, they also have smaller brains and head sizes. "This is one of the first bits of evidence that strongly suggests that a defect occurring early in development could be a factor in schizophrenia," she said. The findings were presented at the American Psychiatric Association's annual meeting in Dallas.*

HEART-RELATED RISK FACTORS IN AN ADOLESCENT *can predict a person's chances of developing heart disease later in life, a UI researcher told the 58th Scientific Sessions of the American Heart Association in Washington, D.C. in November. William R. Clarke, Preventive Medicine and Environmental Health, says it's important to check an adolescent's fat levels and blood pressure as a part of routine health care to identify those at risk for premature cardiovascular disease. The UI study examined 13,000 adolescent school children in Muscatine, Iowa to find risk factors during adolescence and young adult stages.*

A DRUG THAT MAY BE SAFER AND MORE EFFECTIVE *than those now used for treating acute strokes will undergo a two-year preliminary study at the UI. Neurology researchers Harold Adams and Jose Biller are investigating the use of "heparinoids," drugs akin to heparin, which is now used in treating strokes. Biller said previous studies of heparinoids indicate they help prevent blood clots from forming, but do not thin the blood so much that internal bleeding becomes a problem, as can happen with heparin. In the study, the UI researchers plan to recruit 40 patients who have had acute strokes within the previous 24 hours.*

This report has been compiled by the University of Iowa Health News Service.



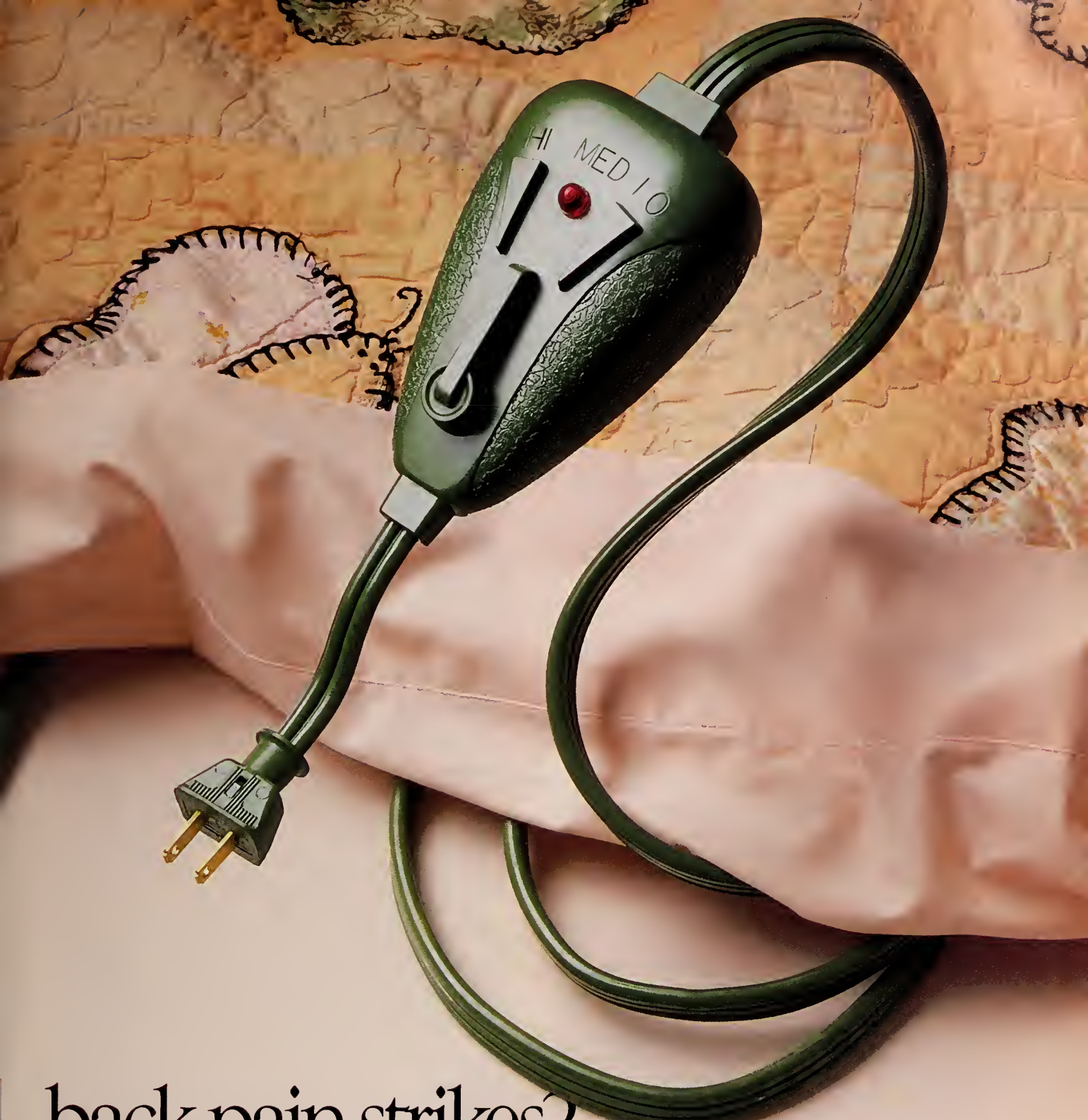
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DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

INFLUENCE OF FORMULATION ON ORAL DRUG DELIVERY: CONSIDERATIONS FOR GENERIC SUBSTITUTION AND SELECTION OF SLOW-RELEASE PRODUCTS

TRADITIONAL MEDICAL EDUCATION related to therapeutics has concentrated on the pharmacologic properties of drugs in altering disease states. The ability of a dosage form to alter a drug's intrinsic pharmacologic properties and consequent therapeutic efficacy, however, has often been inadequately appreciated. Two developments in prescribing have increased awareness of the potential influence of the dosage form. The first of these has been the increasing practice of generic substitution which results in the exchange of one formulation of a prescribed medication for another containing qualitatively and quantitatively identical drug, without necessarily assuring standardization of the formulation. More recently, the intentional use of slow-release formulations for some drugs with rapid rates of elimination in order to obtain stable blood levels with acceptable dosing intervals has resulted in rather unique problems as a result of technological limitations in currently used oral delivery systems.

Generic Equivalence

After an extensive review of the bioavailability of drugs published in 1974, Koch-Weser concluded that ". . . among drugs thus far tested, bioinequivalence of different drug products has been far more common than bioequivalence."[1] Despite improved standards for known problem drugs and considerable effort expended by the FDA to disseminate information regarding bioequivalency of different formulations of the same drug, documented bioinequivalency remains common, and concerns remain regarding the adequacy of bioavailability data for many medications without established inequivalencies.[2, 3] Because differences in the rate and/or extent of absorption can influence drug effect, clinicians need to be aware of these variables in selecting products. Several examples in the medical literature illustrate the importance of this.

> ***"Despite improved standards for known problem drugs and considerable effort expended by the FDA to disseminate information regarding bioequivalency of different formulations of the same drug, documented bioinequivalency remains common. . . ."***

The classic example of the influence of formulation as a cause of potential clinical problems was reported for digoxin in 1971 by Lindenbaum *et al.*[4] After observing an unexplained association of unusually high maintenance doses of digoxin and low serum digoxin concentrations in several patients, he explored the biological availability of various digoxin products available for use in the wards of a New York City municipal hospital. He found significant variation between different products and, perhaps even more disturbingly, found significant variation between different lots prepared by a single manufacturer. He

This information on public health matters is furnished and sponsored by the Iowa State Department of Health.

concluded that chemical equivalency of different formulations were insufficient to assure biological equivalency because of differences in delivered dosage. Their results were subsequently confirmed by others and eventually led to a further understanding of the variables that influence bioavailability of digoxin with improved standardization of production.[5, 6, 7]

Similar to digoxin, phenytoin has a narrow therapeutic index, and variations in rate and extent of delivery of drug have been reported for different formulations.[8, 9] The potential consequences of this are compounded for phenytoin because of dose-dependent kinetics which result in disproportionately large changes in steady state serum concentration from even modest changes in delivered dosage. In a review of the clinical pharmacokinetic and therapeutic implications of variation in absorption, it was concluded that changes in products were contraindicated in stable controlled patients because of the possibility of subsequent intoxication or poor control of epilepsy because of increased or decreased bioavailability respectively.[10]

It does not follow, however, that generic preparations are necessarily *less* well absorbed than brand-name or originator products. In the case of phenytoin, the U.S. Food and Drug Administration called attention to differences of potential clinical importance between the major brand name, Dilantin, and generic phenytoin sodium preparations which are generally more rapidly and completely absorbed. The FDA classified Dilantin Kapseals as an extended delivery product suitable for longer dosing intervals in contrast to the generic preparations which were identified as prompt delivery preparations. Thus, the generic products have been more clearly distinguished in their labeling from the originator product even though it is not apparent that there was an *intent* among either the manufacturers of the originator product or the generics to be different in biological effect. Changes among different formulations of phenytoin thus require close monitoring of serum concentration since different steady state blood levels may eventually be attained as a result of differences in the rate and extent of delivered dose.

Many other examples of both bioinequivalence and therapeutic inequivalence have been described (Table I).[1-3] The clinical importance

(Please turn to page 26)

TABLE I

Selected drugs far which biainequivalence between different praducts has been demanstrated. Asterisks indicate reparts af consequent therapeutic inequivalence.[1, 3]

Amitriptyline*	Penicillin G
Ampicillin	Penicillin V
Aspirin*	Pentabarbital
Chlaramphenical	Phenacetin
Chlardiazepaxide	Phenylbutazane
Diazaxide	Phenytain*
Digaxin*	Prednisane*
Erythramycin	Ribaflavin
Furasemide*	Salicylamide
Griseafulvin	Spiranalactane
Hydrachlarathiazide	Sulfadiazine
Imipramine*	Sulfisaxazale
Indamethacin*	Tetracycline
Levadopa*	Theaphylline*
Nalidixic acid	Thyraid*
Nitrafurantain	Talbutamide*
Oxytetracycline	Triamterene
Para-aminasalicylic acid	Warfarin

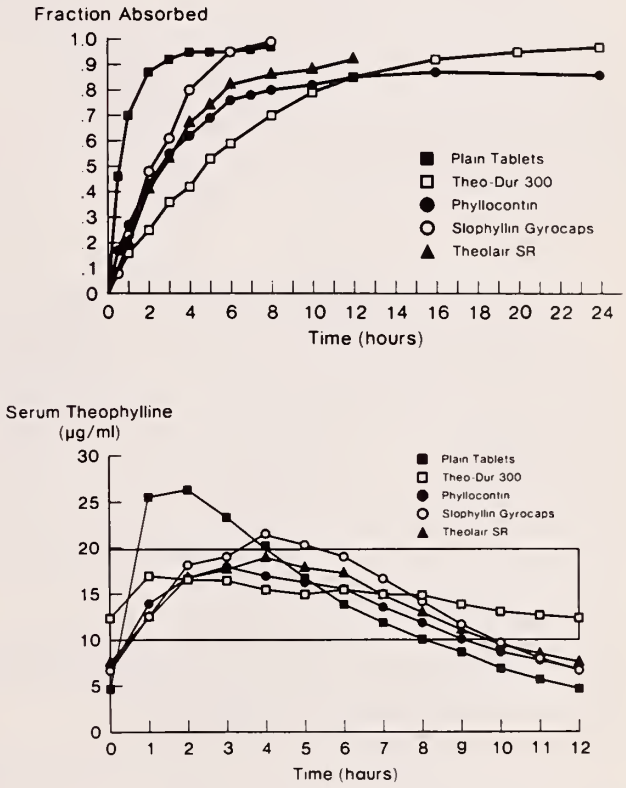


Figure 1. Rate and extent of absorption is represented by the cumulative fraction absorbed following single doses of selected slow-release theophylline products (upper); from these are calculated expected serum concentrations from 12 hourly dosing designed to attain peak serum concentration of 15 mcg/ml in a patient with a half-life of elimination of 3.7 hours, the mean for children 1-9 years of age (lower).[12]

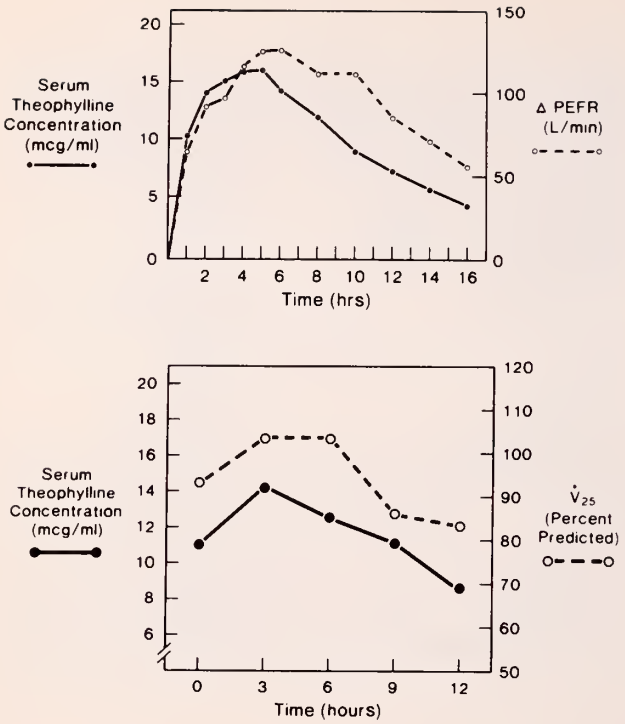


Figure 2. Relationship between serum theophylline concentration and pulmonary function following single doses of a rapidly absorbed preparation (upper)[13] and at steady state during multiple dosing with a slow-release theophylline preparation in children (lower).[14] PEFR — peak expiratory flow rate; $\dot{V}_{25}$ — flow rate at 25% of expiration from vital capacity.

of differences relates to the therapeutic index of the drug, the dose of the drug, and the nature of the disease. For example, the treatment of streptococcal pharyngitis with penicillin will be relatively insensitive to bioinequivalence because of the high therapeutic index of penicillin and the convention of using doses that attain blood levels far in excess of the minimal bactericidal concentrations for the exquisitely penicillin sensitive Group A streptococcus organism. This is in contrast to the narrow therapeutic index and well defined relationship between attained drug level and clinical efficacy with digoxin or phenytoin.

Slow-release formulations

Formulations that have been altered to slow absorption have been associated with considerable variability in rate and extent of absorption that is product dependent.[11] For drugs with rapid rates of elimination, this can result in clinically important variability in serum concentration at steady state (Figure 1) with corresponding variation in clinical effect (Figure 2). This has become particularly important recently with theophylline preparations as competitive pressures have resulted in claims that appear to outstrip the actual technical achievements.

Slow-release theophylline preparations have permitted routine dosing at 8 to 12 hour intervals instead of 6 hour intervals commonly required with theophylline formulations that undergo rapid dissolution. Recent attempts at developing "ultra-slowly" absorbed formulations with claims of once-daily dosing have thus far been associated with varying degrees of incompleteness of absorption.[15-17] In contrast, most (but not all) of the previously marketed slow-release formulations are generally completely absorbed (although at varying rates).[18]

Of particular concern has been the demonstration that 2 of these new slow-release theophylline formulations with incomplete absorption have increased absorption to varying degrees in the presence of food.[15-17] Paradoxically, another theophylline formulation with complete absorption in the absence of food has been shown to demonstrate markedly incomplete absorption when taken with food,[19] while other formulations appear to have no clinically important effects from food (Figure 3).

Recommendations

The potential for a formulation to affect drug delivery requires careful consideration on the part of the prescribing physician and dispensing pharmacist. Modest differences in bioavailability will be of little clinical consequence when associated with a high therapeutic index and minimal essential need relative to dosage given. A low therapeutic index, a close relationship between clinical effect and the level of drug in body fluids, and the presence of dose-dependent kinetics of elimination are variables that increase the potential for clinically important consequences of differences in the rate and/or extent of oral drug delivery. An unexpected improvement in bioavailability as a result of change in formulation as in the case of switching from Dilantin brand of phenytoin

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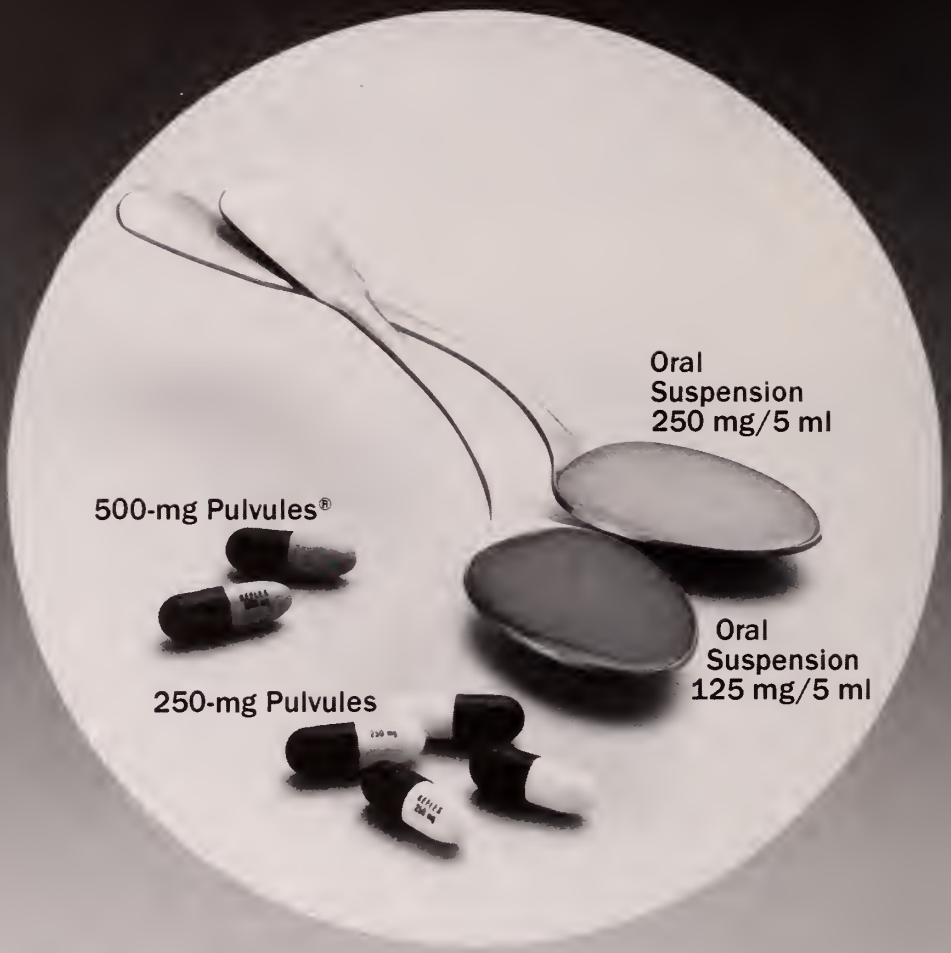
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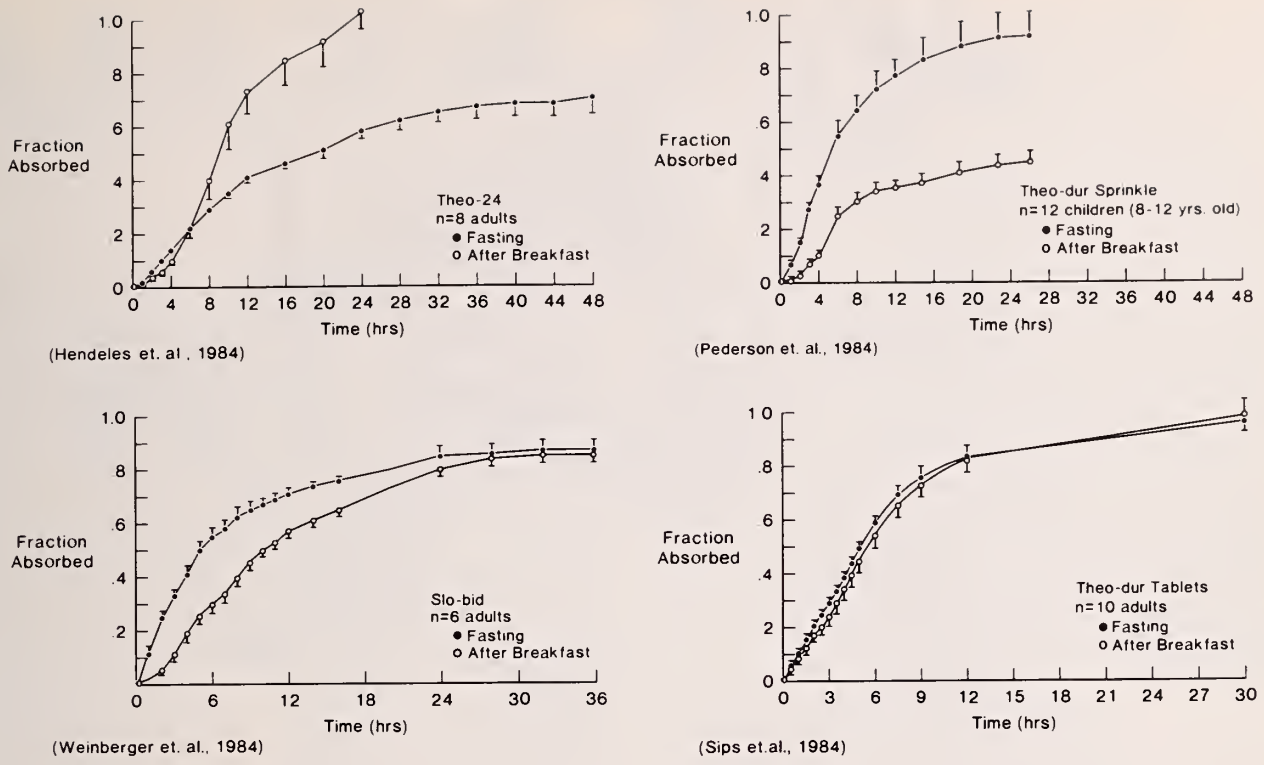


Figure 3. Paradoxical effects of food on Theo-24 (upper left)[15] and Theodur sprinkle (upper right).[19] The major effects of food on both the extent and rate of absorption are apparent; in contrast, no effect of food on extent and only modest effect on rate are associated with Slo-bid gyrocaps (lower left)[20] or Theodur tablets (lower right).[21]

to a more rapidly and completely absorbed generic preparation can result in toxicity much as may occur from the use of incompletely absorbed slow-release theophylline preparations that have increased rate and extent of delivery when taken with food.

These formulation-related variables can particularly confound clinical practice when generic substitution occurs following stabilization of dosage. With pharmacies performing such substitutions more frequently because of changes in state laws and consumer demand, such problems may occur more frequently. Unfortunately, efforts by the FDA to provide guidance regarding the appropriateness of various substitutions are plagued by limitations of current knowledge and dissemination of information.[3] While technical advances in oral drug delivery are under investigation,[22, 23] the prescribing clinician must assume responsibility for awareness of the potential for clinical problems as a result of formulation differences of the same chemical compounds.[24] — MILES WEINBERGER, M.D., *Professor, Department of Pediatrics* and GARY MILAVETZ, PHARM.D., *Clinical Assistant Professor, College of Pharmacy.*

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(Please turn to page 28)

DRUG THERAPY REVIEW

(Continued from page 27)

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November 1985 Morbidity Report

Disease	Nov. 1985 Totol	1985 to Dote	1984 to Dote	Most Nov. Coses Reported From These Counties
Aids	2	13	2	
Amebiosis	3	52	64	Jahnsan, Palk, Wopello
Brucellasis	0	5	2	
Chickenpax	356	5891	6878	Scottered
Compylobocter	19	296	314	Scattered
Cytamegolovirus	5	14	12	Block Hawk, Jahnsan, Palk
Eotan's Agent infectian	2	8	34	Dubuque
Encepholitis, virol	2	29	31	Black Howk, Winneshiek
Erythemo infectiasum	0	0	52	
Gastroenteritis (GIV)	1735	14086	12310	Scottered
Giordiosis	57	477	368	Scottered
Hepotitis, A	10	54	55	Scattered
Hepotitis, B	12	91	98	Scattered
Hepotitis, Nan A-B	1	15	19	Plymouth
Hepotitis type unspecified	1	8	10	Block Howk
Herpes Simplex	142	1118	867	Scottered
Herpes Zoster	0	0	2	
Histaplosmosis	0	19	19	
Infectiaus monanucleosis	37	176	148	Scottered
Influenzo, lob canfirmed	1	170	176	Scatt
Influenzo-like illness (URI)	4383	34951	37758	Scattered
Legionellosis	2	13	4	Clorke
Molorio	0	2	2	
Meningitis oseptic	9	53	60	Scottered
bacteriol	19	129	111	Scottered
meningacaccol	1	9	22	
Mumps	3	17	25	Block Hawk, Linn
Pertussis	3	31	13	Hordin, Jeffersan
Robies in animols	8	142	140	Scottered
Reye Syndrame	0	4	2	
Rheumatic Fever	0	4	0	
Rubello (Germon meosles)	0	1	1	
Meosles	0	0	0	
Solmonellosis	15	263	239	Scottered
Shigellasis	0	18	97	
Toxic Shock Syndrome	2	8	13	Palk, Poweshiek
Tuberculosis totol ill	4	53	62	Johnsan, Palk, Pattowottomie, Scatt
boct. pas.	3	49	56	Johnsan, Polk, Pattawottomie
Typhoid Fever	0	3	0	
Venereol diseoses:				
Gonorrhea	482	4113	4197	Scottered
Syphilis	0	18	11	
Chlomydio	148	202	—	Scattered

Other Non-Reportoble Diseoses: Ascaris — 2, Johnson, 1, Scott; Clanarchis — 3, Johnson; Meningacaccal sepsis — 2, Woadbury; Rotovirus — 1, Polk; Trichuris Trochuriro — 1, Johnson; Ureaplasmo Ureolyticum — 1, Block Howk, 5, Johnson, 1, Muscatine, 1, Washington.



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NEW HUMAN INSULIN PRODUCT — Eli Lilly and Company has announced the third form of Humulin, the human insulin made by recombinant DNA technology. Humulin L Joins Humulin R and Humulin N to provide an expanded line of human insulin to meet individual needs. Humulin L is the Lente formulation providing intermediate action, while Humulin R is a short acting insulin. Humulin N is also an intermediate acting insulin but with a different formulation.

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PLAY SAFE: How to Avoid Getting Sexually Transmitted Diseases, *Mandel, Bea, and Mandel, Byron,* 1985, Center for Health Information, P.O. Box 4636, Foster City, California 94404. Paperback, $4.95 plus shipping. This book is for the public and provides concise, understandable information about sexually transmitted diseases. Over 10,000,000 Americans contract a STD each year. A question-and-answer format provides straightforward information.

THE INVENTION OF THE MODERN HOSPITAL, *Vogel, Morris J.,* 1985, Boston 1870-1930, University of Chicago Press, Chicago. Paperback, $6.95. A study of how social and economic factors transform charity hospitals into modern scientific institutions to serve all classes. Hospital growth does not depend only on advances in medical science.

SCIENCE IN NINETEENTH-CENTURY AMERICA: A Documentary History, *Reingold, Nathan,* 1985, University of Chicago Press, Chicago. Paperback, $12.50. A series of letters by and to 19th century American scientists of several disciplines. Each grouping is introduced into its historic context.

SOCIAL ORGANIZATION OF MEDICAL WORK, *Strauss, Anselm, et al,* 1985, University of Chicago Press, Chicago. Price, $25. This book looks into the hospital as a workplace which demands an understanding of how things happen within that segment of social interplay. This is a study of the relationships between the various disciplines of health care, as well as their relationships to the patients.

HOME CARE FOR THE DYING, *Little, Deborah Whiting,* 1985, Dial Press/Doubleday & Co., Inc., Garden City, New York. Paperback, $9.95. Based upon numerous interviews with health care specialists as well as terminally ill patients and their families and friends, this book provides a comprehensive guide to the health care of terminally-ill patients.

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The basic diet principles included in the LGD provide adequate nutrition and meet the Recommended Daily Allowances. Here are the LGD elements:

1. The diet emphasizes a reduced intake of sugar. Sugar and products made with large amounts of sugar and syrup are not included. Fresh fruits and canned fruits without sugar are encouraged. Foods such as pancake syrup, pies, cookies, ice cream, cakes, etc., are used only infrequently.

2. Sodium intake is reduced by using limited amounts of salt in food preparation and limiting salty foods. Salty foods such as potato chips, processed cheese, pickled foods, cured and processed meats are used only in very limited amounts. The daily menu plan would not include more than 4000 mg sodium per day.

3. The plan reduces the fat intake by altering cooking methods and limiting high fat foods. Foods are cooked without adding fat using broiling, baking, boiling methods rather than frying. All visible fats are trimmed. Butter, margarine, and shortening are limited in use. If egg yolks and organ meats are limited, the plan is low in cholesterol.

In addition, the Liberal Geriatric Diet encorages the use of fiber-rich food (whole-grain breads and cereals, fruits, and vegetables). Six to 8 cups of fluid are recommended to provide adequate hydration and promote gastrointestinal function.

Residents in health care facilities may have chewing and swallowing difficulties. In these situations, food textures are adapted to meet individual needs by chopping, grinding, or pureeing/blending.

If the physician chooses the LGD then it must be ordered as such. It cannot be combined with a specific calorie, sodium, or fat restriction since this would in effect cancel the liberalization diet.

Use of the LGD as an alternative for very restrictive diets promotes a continued interest in food. Diets restricted in salt and sugar often promote a lack of eating resulting in malnutrition. In all health facilities in Iowa, a qualified dietitian is employed for the purpose of evaluating the nutritional needs of residents and assuring that meals provide the necessary medical and nutritional needs. The dietitian is an available resource to help implement the Liberal Geriatric Diet.

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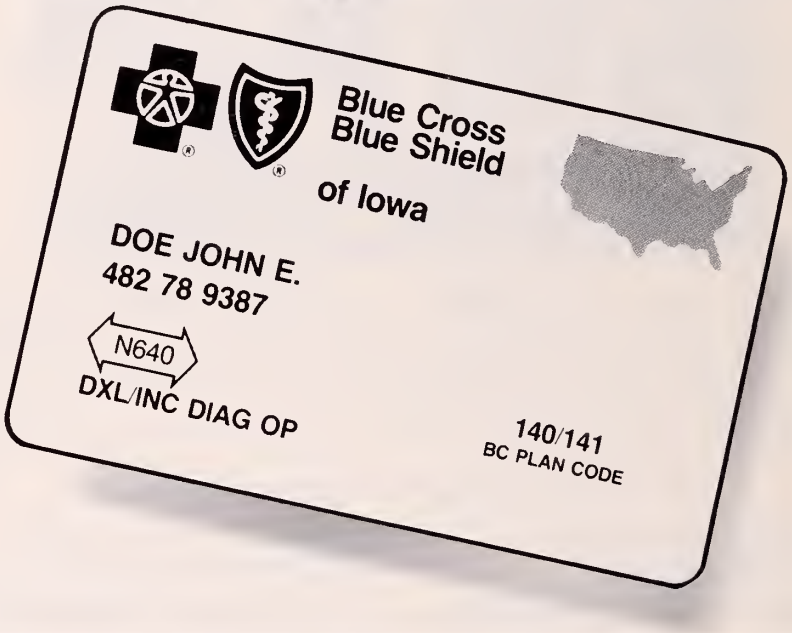
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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Albin C. Bergstrom, retired Missouri Valley physician, has been named Citizen of the Year by the community's Chamber of Commerce. Dr. Bergstrom is the first such honoree in a new program to recognize an outstanding citizen. . . . **Dr. Thomas DeBartolo,** Mason City, participated in a recent regional review course in hand surgery in St. Louis. The annual course is sponsored by the American Society for Surgery of the Hand. Dr. DeBartolo discussed "Principles of Tendon Transfer to the Hand."

Dr. Donovan F. Ward, Dubuque, is president of the Fifty Year Club of American Medicine. He was elected at the organization's annual meeting in Chicago. Dr. Ward was president of the American Medical Association from 1964-1965. . . . **Dr. Randall L. Spaude** has joined the Bluff Medical Center, P.C., in Clinton. He was incorrectly reported to have located in Council Bluffs in a previous issue.

Dr. Stephen C. Elliott and **Dr., John W. Olds,** Des Moines physicians, have been appointed co-directors of epidemiology and infectious diseases at Iowa Methodist Medical Center in Des Moines. **Dr. Steven L. Shook** has joined

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Dr. John A. Walck at Wholistic Health Services of Sioux City, P.C. Dr. Shook received his M.D. degree at the U. of I. and served his family practice residency at Siouxland Medical Education Foundation in Sioux City. . . . **Dr. William C. Rosenfeld,** Mason City, was a guest speaker at the annual meeting of the Iowa Academy of Family Physicians. Dr. Rosenfeld's topic "Ethiopia — Famine and Frustration."

Dr. Jerry Wehr joined Grinnell Family Care, P.C. in September. Dr. Wehr received the M.D. degree at the U. of I. and served his family practice residency in Cedar Rapids. Prior to locating in Grinnell, Dr. Wehr served 4 years with the U.S. Air Force Strategic Air Command. . . . **Dr. Charles E. Grado** has opened a plastic and reconstructive surgery practice in Cedar Rapids. Dr. Grado received the M.D. degree at Southern Illinois University in Carbondale; completed a general surgery residency at the University of Missouri and the University of Nebraska, and a residency in plastic and reconstructive surgery at Southern Illinois University in Springfield, Illinois. . . . **Dr. Margaret D. Smith** has joined the Ottumwa Clinic. Dr. Smith received the M.D. degree at Georgetown Medical School in Washington, D.C., and completed her rheumatology residency at Johns Hopkins in Baltimore. . . . **Dr. Robert Isham,** Osage, recently retired from practice at the Osage Medical Group. Dr. Isham is a U. of I. medical graduate and had postgraduate work in obstetrics and gynecology at Crosset, Arkansas. He began medical practice in Osage in 1949. . . . **Dr. Donald J. Ahrenholz,** Waterloo, was guest speaker at a public information series entitled, "For Women Only," sponsored by Schoitz Medical Center. Dr. Ahrenholz spoke on "Face Lifts, Tummy Tucks and You."

Dr. Azher B. Uddin has joined Marshalltown Pediatric Associates. Dr. Uddin received the M.D. degree at Mysore Medical College in India. Her first year pediatric residency was at Morristown Memorial Hospital in New Jersey; second year at Monmouth Medical Center in New Jersey and third year at Baltimore City Hospital and John Hopkins in Baltimore,

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Maryland. . . . **Dr. Loran E. Coppoc,** Ottumwa, retired from medical practice in September. Dr. Coppoc received the M.D. degree; and completed his surgery residency at the University of Nebraska School of Medicine. He began his medical practice in Ottumwa in 1951. A trainer of Morgan horses, Dr. Coppoc was named to the Saddlehorse Hall of Fame at the Iowa State Fair in 1982. . . . **Dr. John S. Downing,** longtime Cedar Rapids pediatrician, recently retired from his teaching position at the Family Practice Center in Cedar Rapids. Dr. Downing received the M.D. degree at the U. of I.; interned at Akron, Ohio; and served his pediatric residency at University Hospitals in Iowa City. Prior to teaching at the Family Practice Center, Dr. Downing was in private practice in Cedar Rapids.

Dr. Mark E. Thoman, Des Moines, is one of 11 individuals invited to chair a special session of the World Federation of Clinical Toxicology Centers under the auspices of the Commission of European Committees and International Program of Clinical Safety of the World Health Organization (WHO). The WHO meeting occurred in October in Geneva, Switzerland. Dr. Thoman will also represent the United States in special sessions of the World Federation of Clinical Toxicology in Brussells, Belgium.

Dr. Jack L. Bristow, Sioux City, is chairman, Iowa section, American College of Obstetricians and Gynecologists. For the past 3 years, Dr. Bristow has served as vice chairman. . . . **Dr. Rodney A. Erickson,** Vinton, has been awarded a plaque from the U. S. Public Health Service. Dr. Erickson was recognized for his community involvement and his promotion of health-related activities. . . . **Dr. John E. Owens,** Sioux City, has been elected a fellow in the American College of Cardiology. Dr. Owens received the M.D. degree and completed his residency at Virginia Commonwealth University Medical College in Richmond. . . . **Dr. Marian L. Barnes** was named as "Physician of the Year" by the Iowa Health Care Association. Dr. Barnes received the Award for her outstanding service to residents at Mechanicsville Care Center and her genuine interest and commitment to quality care of the elderly.

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A Monthly Commentary

IN THE PUBLIC INTEREST

The Personal Touch — So Important!

PERCEPTION IS often more important than truth.

CONSIDER THE following illustration drawn by a longtime Iowa physician: Two doctors use the exact same treatment regimen on their patients. Both doctors get poor results. One doctor is sued; the other is not.

What made the difference? According to this physician, "The doctor who was sued was perceived by the patient as brusque, sterile and uncaring."

The truth is, a vast majority of physicians feel genuine concern and compassion for their patients. However, communicating these feelings is more difficult than it once was, say several veteran Iowa physicians.

"There was a day when we had a shortage of doctors. Doctors made house calls and were thought of as part of the family. Medical care involved 'laying on of the hands.' It left a very caring impression and produced more thankfulness on the part of the patient," says an Iowa physician in practice since 1936. "Obviously, there's been a big change."

"Today's more sophisticated patient is harder to please and has much higher expectations than his predecessor," concurs another physician.

Why? Because doctors, like other professionals, practice in a litigious atmosphere. Because patients are better informed and have higher expectations. Lastly — and most ironically — because technology has brought physicians light years past the laying on of hands.

"The more things there are to do for a patient, the more chances there are for failure," he continues. "Doctors are just as caring as they once were, but they are using different methods."

In other words, the very technology which allows physicians to be more effective healers also makes patients perceive physicians as less caring.

Consequently, senior physicians interiewed at the end of 1985 advise their colleagues to be especially conscious of the perception they are leaving with their patients.

"Most doctors do an excellent job, but sometimes the patient doesn't pick it up. The patient knows immediately if you're talking to them but thinking about something else. Time is always a crucial factor. It's hard for a doctor to proportion the right amount of time to a seriously ill patient and not short the patient who seems to be doing well," one physician relates.

Physicians interviewed say demonstrating interest and concern to the patient can be as simple as cultivating the art of listening. Or apologizing if you are late. Or calling a patient immediately with test results. Or taking an extra minute to make sure the patient understands.

Despite today's advanced medical technology, physicians say the personal touch has not lost any of its importance. Patients still need to know their doctor cares and wants them to get well.

"Letting them know you care gives the patient confidence," concludes a past president of the Iowa Medical Society. "When patients have confidence, it's much easier for them to get well."

January 1986

Iowa Medicine

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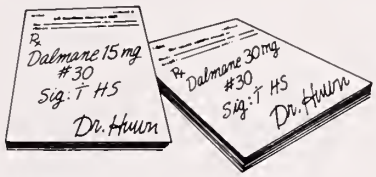
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IowaMedicine

February 1986

Journal of the Iowa Medical Society



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Internal Medicine
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Full information about forms and limits of coverage, rates, classifications and other aspects of the Iowa Medical Society IPMIT/AMACO Liability Insurance Program will be furnished on request to IMS SERVICES, 1001 Grand Avenue, West Des Moines, Iowa 50265.

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February 1986

IowaMedicine

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Journal of the Iowa Medical Society

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ABOUT THE COVER



ABOUT THE COVER — Iowans appear to agree that the state's malpractice law is indeed in need of a check-up! Thus, a red check has been selected as the graphic focal point for the effort now being mounted by the medical profession to reform the Iowa legal process for handling malpractice allegations. This striking logo was unveiled in January and will be used regularly to identify materials associated with the Iowa Medical Society campaign. Please read the several articles related to this important program.

IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-8709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: $15 per year. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

NATIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 South Blvd., Oak Park, Ill. 60302. Phone 312/383-8800

IOWA ADVERTISING: Contact Mrs. Polly Lynch, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265. Phone 515/223-1401

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MERCY HOSPITAL MEDICAL CENTER

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PRESENTS

UPDATE ON HYPERTENSION

MARCH 12, 1986

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PRESIDENT'S PRIVILEGE



MALPRACTICE LAW — Time for a check-up!

MY FELLOW PHYSICIANS, this is our 1986 theme, our slogan, our watchword. It will be ever so present in the time just ahead. Our banner was unfurled in January amid a clarion call to action. We are moving full steam toward our stated goal as these words are prepared.

What is the goal?

Simply put, it is "to gain favorable public and legislative support to enact statutory reforms regarding the medical liability issue in Iowa." And, encouragingly, Iowans appear to believe that reform is in order, based on scientific polling data acquired in recent weeks.

How are we going to accomplish our goal?

Again simply put, "through a broad grassroots effort in communities across Iowa. This grassroots effort will be the most vital component in our malpractice campaign. Action teams will mobilize at the local level to educate and inform all target audiences."

On January 15 we had between 20 and 30 Iowa physicians at Society headquarters. They pledged their time and talents to the project. And they trained themselves to act as principal spokespersons. In these individuals we have a "speakers bureau" of Iowa physicians. They will make themselves available — to the extent schedules permit — to speak to groups, to participate in interviews, to build awareness and support for reforming the tort system.

My hat is tipped in gratitude and admiration to these physicians. Their efforts will be of enormous value. Please contact IMS headquarters if you have an occasion or meeting where the knowledge and talents of these physicians can be used.

Clearly, the system for adjudicating medical malpractice needs updating. Such action is in the best interest of our patients with respect to the cost and accessibility of medical care. Achieving change is going to require the active interest and participation of many Iowa physicians — *including me and you!*

Emmett B. Mathiasen MD

Emmett B. Mathiasen, M.D.
President

Advocate 17 Changes In Iowa Malpractice Law

Eight of 10 Iowans think current malpractice law is affecting adversely what they pay for medical care. And 7 of 10 think changes in the applicable Iowa statutes need to be made by the Iowa General Assembly now convened. Here is a summary of the reform proposals being advanced by the medical profession.

THERE ARE 17 recommendations in the 1986 legislative reform package being advocated vigorously by the Iowa Medical Society and the Iowa Osteopathic Medical Association. Positive action on the recommendations of a legislative nature, coupled by implementation (several do not require legislative action) of those that do not, will produce an Iowa system (a) that compensates the truly injured fairly and promptly; (b) that benefits the general public by helping to stabilize health care costs and maintain the availability of services; and (c) that discourages baseless suits/claims against physicians.

The IMS/IOMA recommendations need to be known and understood and advanced by all member physicians. To this end, IOWA MEDICINE is providing this summary of proposals.

All Peer Review Records Should Be Made Non-Discoverable

Information from peer review records is not admissible in court, but it may be accessed during pre-trial discovery, which can influence the outcome of a suit even when the information is not admitted as evidence during a trial. Additional statutory protections are needed to assure the confidentiality of open and frank peer review discussions.

Encourage the Board of Medical Examiners to Use Existing Authority To Approve and Utilize Peer Review Committees

In investigations relating to appropriate medical practice, the BME has statutory authority to approve and utilize hospital, state and county medical society peer review committees. Better utilization of this arrangement would provide the BME valuable assistance and assure timely and expert reviews. The investigation activities of such committees, if approved by the BME, would also have the benefit of statutory confidentiality protection.

A Required Submission of Disciplinary Actions Taken by Hospital Medical Staffs or Medical Societies to the Iowa Board of Medical Examiners

Physician practice in Iowa is regulated by the BME and monitored by hospital medical staffs and professional medical societies. However, it is not currently required that disciplinary actions taken by a hospital medical staff be reported to the BME, even though the Board has statutory authority to discipline physicians. This recommendation would give the BME access to additional information which may help identify physicians who are practicing below acceptable standards — assuring consumers that only quality medicine is practiced in Iowa.

Encourage the BME to Hire More Staff

Currently the BME has 5 investigators; additional staff would assure the public and physicians that complaints and reports receive timely and expert review. The additional staff would assist with investigations and review reports submitted to the BME.

Support for Increased BME Appropriations, as Needed

The medical profession supports appropriation requests to fund current and suggested BME activities adequately. The profession fully recognizes the implications for possible increases in physician licensure fees, which by law must be set by the BME at a level sufficient to offset appropriations from the state general fund.

Require that Insurance Companies Provide a Summary of the Final Disposition of All Claims or Suits to the Commissioner of Insurance

Presently, malpractice incident reports are filed with the Commissioner of Insurance, who then reports the information to the Iowa Board of Medical Examiners. However, there is no requirement to report the final disposition of the incident. Such a requirement will provide the BME with additional pertinent information which may show cause for disciplinary action.

Encourage the BME to Require at Least Four Hours of Continuing Education In Risk Management Every Two Years

Doctors are required to take 20 hours of continuing education per year. Of these, at least 4 hours, every 2 years, would cover risk management — consistent with the medical profession's commitment to ensure that physicians are exposed to information on this subject.

Devote Sufficient IMS and IOMA Resources to the Development and Distribution of High Quality Risk Management Information

This will strengthen the existing commitment by IMS and IOMA to provide high quality risk management information to all members, covering record documentation, patient communication, etc.

Require Plaintiff Attorneys to Name Expert Witnesses in Initial Filings of Suit and Require that the Witness Certify Validity of the Suit Against Each Defendant

Naming an expert witness in the initial filing of a medical liability suit and requiring certification of merit by the expert witness — for each defendant — may reduce the number of suits filed where a plaintiff attorney has not adequately researched the viability of a case.

Mandate Standards of Qualification for Expert Witnesses

Proposed qualification standards would require that expert witnesses devote at least 75% of their professional time to the involved specialty through active clinical practice or instruction at an accredited university. The witness must have been in active practice for at least the past 5 years and hold a license to practice medicine in Iowa or a contiguous state.

Provide Authority for Physicians to Seek Remedy in Non-Meritorious Suits

Specific statutory language would expand the circumstances when a physician could countersue.

Cap Awards for Non-Medical Damages

Although no limitations would be placed on awards for future medical expenses, a $500,000 limitation would be placed on defendant(s)' total liability. The limitations would apply to each occurrence regardless of the number of defendants. Awards for non-economic loss, such as pain and suffering, would be limited to $200,000. Both limitations would be tied to a specified cost of living indicator and adjusted yearly.

According to an independent study by the Rand Corporation Institute for Civil Justice, capping awards is the action most likely to reduce medical malpractice costs. This proposal assures:

- *Plaintiffs receive necessary recompense for medical expenses;*
- *Stability for medical liability insurers to project*

(Please turn to page 52)

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future losses and premiums to cover such losses; and,

- *A limit on non-economic awards for such things as pain and suffering.*

Mandate Itemization of Settlements and Judgments

Such itemization of past and future damages for medical expenses, lost wages or earning capacity, and pain and suffering will provide an incentive for more thoughtful evaluation of judgments. This information will also be needed to structure proposed payments of awards for future damages and to apply the proposed limitations on the award of non-economic damages.

Limit on Attorney Contingent Fees

Currently, only 30 cents of every premium dollar reaches the plaintiff. Generally, with the current system, a plaintiff's attorney receives approximately one-third to one-half the malpractice settlement or award, after court costs and expenses.

Although Iowa law requires the court to review contingent fees, IMS and IOMA believe this requirement has been ineffective in regulating such fees. To ensure that more of the award goes, as intended, to the plaintiff and not to the plaintiff's attorney, proposed legislation would limit plaintiff attorney fees to:

- *not exceed 35% for the first $100,000;*
- *25% for the next $100,000; and,*
- *10% of any award over $200,000.*

Mandate Periodic Payments for Awards in Excess of $100,000

This assures that future medical and living expenses would be available to the plaintiff when needed. It also would protect medical liability insurers from shock losses, experienced from large payouts, and increase their ability to predict losses over a period of time.

Future damages for the plaintiff are based upon actuarily determined life expectancy tables, and this provision precludes heirs from receiving inappropriate portions of awards when the plaintiff dies while also assuring that past and current costs are paid immediately.

Shorten Additional Time Period Provided in Statute of Limitation for Minors and Mentally Ill

Existing law allows a minor to bring suit anytime up to age 19, regardless of when the injury occurred. IMS and IOMA propose this special treatment accorded to minors terminate at age 6, after which time they would be subject to the same statute of limitations as anyone else.

Regarding mentally ill patients, it is recommended that the special provision in existing law be repealed, subjecting them to the same statutory protection as everyone else. The law currently provides the statute of limitations does not begin to run until one year following the attainment of competency.

Awards for Punitive Damages Be Prohibited as Part of Any Judgment

The IMS and IOMA believe punitive actions against physicians should be the responsibility of the Iowa Board of Medical Examiners, a regulatory group appointed by the Governor, and that plaintiffs should be compensated for losses only.

Iowans In Favor Of Liability Reform

If the scientifically measured attitudes of Iowans are any indication, medical malpractice laws in this state need to be updated. Over 70% of our population believes change is needed, according to a new survey. More data supporting this belief are provided here.

INTERESTINGLY, there is substantial agreement among Iowans as a general population and the medical profession as a demographic subset, that:

- *The issue of Iowa medical malpractice law bears on the cost of health care!*
- *The Iowa General Assembly should make changes in our malpractice laws!*
- *That these changes need to be made now!*

These findings have emerged from independent research just completed by the Charlton Research Company of San Francisco, California. CRC was retained in October 1985 by the Iowa Medical Society to assess the understanding of Iowans on medical liability issues and to measure attitudes of Iowa physicians on this subject.

The CRC analysis of Iowans generally is based both on focus group discussions and a random sample survey of 500 Iowans conducted between November 21 and 25, 1985, through a 22-minute telephone questionnaire. A random sample of Iowa physicians was surveyed by mail with the return of 780 surveys to produce a 95% confidence level in polling parlance.

Is the System Working Well?

In the overall Iowa population sector, when asked, *Is the malpractice system working well?, 67% of the respondents said it needs changes.* (See Table I.) This expression for change by two-thirds of the respondents becomes even more emphatic when we note that only 14% think it is working well.

If the present system is not working well, who is needed to make the changes? Iowans

TABLE I

IS THE MALPRACTICE SYSTEM WORKING WELL?

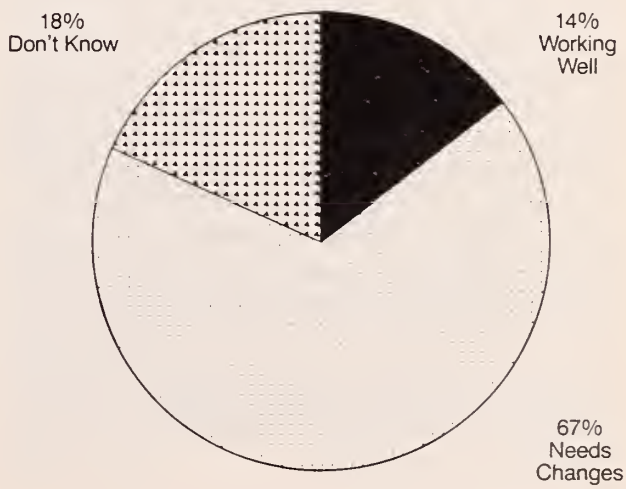


TABLE II

SHOULD STATE LEGISLATURE MAKE CHANGES IN MALPRACTICE LAWS?

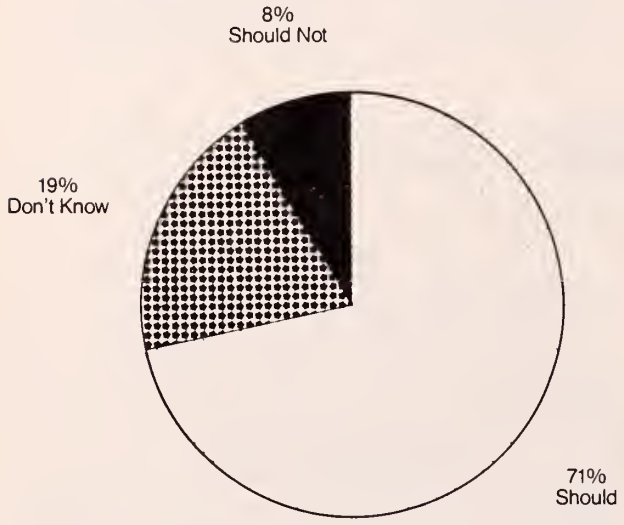
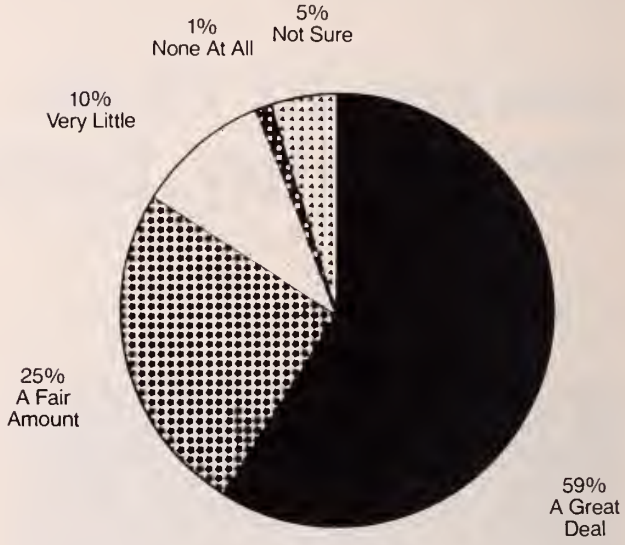


TABLE III

EFFECT OF MALPRACTICE ON COST OF HEALTH CARE



were asked, *Should the state legislature make changes in malpractice laws? Almost three quarters (71%) answered yes the General Assembly should make changes, while only 8% answered no; 19% were undecided.* (See Table II). The physician survey produced an 83% response favoring substantial change with 17% saying some or very little change should be made.

The escalating effect of today's malpractice laws on the cost of health care is apparent to the public. Eighty-four percent of the survey respondents acknowledged this influence on their costs, with 59% of that group saying it has a significant impact. (See Table III.)

At a time when concern exists over the serious condition of the Iowa farm-concentrated economy, health care costs are seen as a factor aggravating our downturn. Citizens generally and the medical profession predictably see the system as costly. Iowans know that excessive malpractice awards lead to higher physician insurance premiums and thus to higher health care costs. The premium impact on Iowa physicians is substantiated by survey reports (a) of doubled premiums over a short interval; (b) of withdrawal from the performance of certain procedures, and (c) of an unwillingness to accept high risk patients.

Do Iowa Laws Affecting Malpractice Need Change?

Answering this question meaningfully requires optimal understanding of the complex issue. Thus, probably, a greater number (38% in this case) might be expected to indicate they do not know. But of those who had an opinion, it was nearly 4 to 1 in favor of *substantial* or *some* change over *very little*. (See Table IV.)

Interestingly also, as related to this response and the survey generally, the more that Iowans are informed on this issue, the more likely they are to support medical liability reform. Another factor of particular importance to the medical profession in bringing information on this subject to the public is the high credibility level given to physicians by the survey respondents.

System Falls Short in Service to Public

Where they would presumably prefer a malpractice system that aids the public and the patient, those citizens answering the survey said instead they think it favors the professions; 35% said it favors the lawyers; 15% said

it aids physicians. About one in five (21%) said the system favors the patient, and only 11% said it serves the public foremost. (See Table V.)

Favor Medical Profession's Plan for Medical Liability Reform

This recent independent research has produced an indication of strong support from both the public and the profession for the medical liability reform plan being advocated by the Iowa Medical Society and the Iowa Osteopathic Medical Association. Both the public and the physicians favor:

- *Placing a limit on the amount of malpractice awards.*
- *Paying settlements in installments.*
- *Making it easier for doctors to sue lawyers who bring malpractice suits without merit.*
- *Regulating lawyers' fees.*

The matter of physician competence is clearly of major importance to the public. Some citizens view the malpractice system as the only way to discipline physicians. Adequate measures to assure physician competence and to address incompetence registered strongly with

TABLE IV

DO IOWA LAWS AFFECTING MALPRACTICE NEED CHANGE?

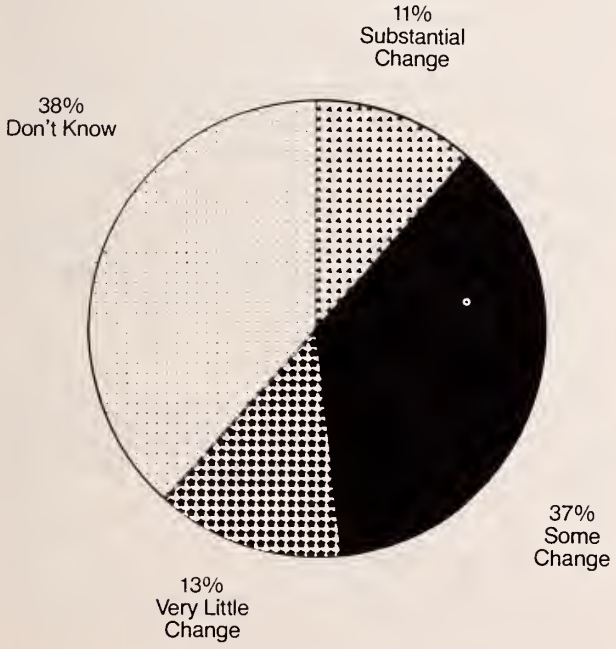
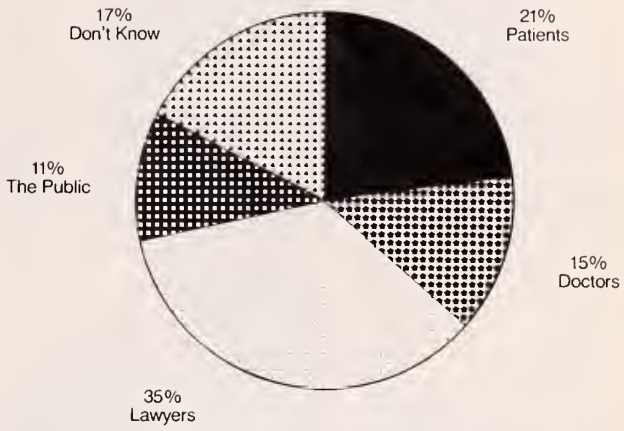


TABLE V

WHO DOES THE CURRENT MALPRACTICE SYSTEM FAVOR?



Iowans. It appears to be a necessary and essential component in any reform plan.

Is Change in the System to Be Achieved?

This is the question of the hour. Physicians say they will work toward this goal. They say they will share their concerns with patients; they indicate they will contact their legislators; they are willing to work with community leaders and the press to achieve the goals.

It is clear the public wants to hear from their doctors! The medical profession is now embarked on a program to achieve the reform endorsed by a majority of Iowans.

Additional Information on Request

The Iowa Medical Society is happy to furnish interested persons with further information on any aspect of its program to update those state statutes which cover the adjudication of medical malpractice.

A special informational folder has been prepared to assist Iowans in understanding this critical and complex subject. These folders are available in quantity for distribution by physicians in their reception rooms and other places.

Please contact IMS Headquarters (515/223-1401 or 800/422-3070) if you desire additional materials.

Questions and Answers —

An Interview With Paul von Ebers, Senior Vice-President, External Affairs, Blue Cross and Blue Shield of Iowa

New Delivery Approaches Still Target on Economy

Even with Iowa successes in utilization and cost controls, purchasers still look for relief in health care costs. Today, the physician has an opportunity to be highly involved in the design and implementation of new programs whose objectives are efficiency and avoidance of excess. So says an official of Blue Cross/Blue Shield in this question/answer session.

YES, RIGHT UP there with medical malpractice as a major topic of our time is the matter of competition. Competition translates into the need and demand for getting more cost effective care to patients. Underscoring all of this is most assuredly the need to maintain quality. How all of this comes together is the tall order of the day.

The following expanded question and answer discussion provides a perspective on medical care delivery from Paul von Ebers, senior vice president of external affairs for Blue Cross and Blue Shield of Iowa.

As Iowa's major and historic third-party health care financing mechanism, how do you characterize the posture of Blue Cross and Blue Shield of Iowa at this time of increasing diversity in the qualification for and payment of health care?

Iowa has received a significant amount of deserved attention for cost-containment accomplishments in the last 3 years. Over-utilization, once the cornerstone of Iowa's cost problem, has been effectively controlled in most parts of the state. As a result of a more than 30% decline in inpatient use since 1980, Blue Cross and Blue Shield of Iowa rates have decreased or stabilized for a great majority of our subscribers.

Iowa's health care challenge today is maintaining cost containment momentum without sacrificing the high quality of care. The way to accomplish this is through benefit programs that build close alliances among physicians, hospitals, insurers and subscribers for cost-effective delivery of health care services.

Health Maintenance Organizations (HMOs), Preferred Provider Products (PPPs) and new "managed care" programs are keys to a fresh emphasis on health care cost and quality management.

Blue Cross and Blue Shield of Iowa will have 3 such alternative benefit programs in 1986 to meet Iowa's diverse health care needs:

Total Health Network

Total Health Network of Iowa, our HMO which is now operational in Dubuque, Des Moines and Ames, will launch new sites this year.

Iowa Health Alliance

A new managed care program called Iowa Health Alliance has been implemented in Ce-

dar Rapids. This program offers patients a free choice of physicians, emphasizes planning and coordination of care through pre-admission certification. It provides non-traditional benefits such as home health services and wheelchair ramps when medically appropriate, cost-effective, and in accordance with the physician's treatment plan.

Utilization review in the Alliance program is performed locally. The pre-certification process for elective admissions allows the physician to confirm medical necessity and benefit payment *before* services are delivered.

Iowa Health Alliance+ and Alliance Select — New PPP Models

Dovetailing on the features of the Alliance program is Iowa Health Alliance+, a new preferred provider product which will channel subscribers to preferred physicians and hospitals who agree to 1) participate in extensive utilization and quality controls, and 2) hold subscribers harmless from penalty for non-compliance with the program's cost containment provisions.

Alliance+ is designed to contract with a broad panel of physicians and hospitals, particularly in rural areas where access to care is a concern.

Finally, a more selective PPP is also in the development stage. In certain areas of the state, this program would channel subscribers to *selected* hospitals and physicians who agree to the cost containment features of the Alliance program. This "Alliance Select" program is designed to give the purchaser additional savings which result from the transfer of patient volume to preferred providers.

All of these programs offer alternative approaches to cost management and place a high emphasis on quality controls. Physicians across the state will have an opportunity to become involved in these new programs.

Is all of what is happening in the nature of evolution or revolution?

Because these programs are relatively new to Iowa, they may appear to be somewhat revolutionary. Five years ago, many employer purchasers sought quick results from high medical costs through reduced benefits and more employee cost-sharing because they couldn't afford to wait for long-term utilization management. These new programs have



Paul von Ebers

evolved as a serious new approach to meaningful cost controls now that some of the urgency in utilization control is past.

While we predict a high growth rate for HMOs, PPPs, and managed care programs in Iowa in the next few years, physicians may *perceive* these new approaches as more evolutionary because they will be involved in putting them together and making them effective.

How do you assess the public's acceptance of the new health care delivery options which have emerged in recent years?

Traditionally, about 10 to 15% of the population has been attracted to alternative delivery system products. We predict these new programs will enroll more than 50% of Iowa's population in the 1990s. Once people become comfortable with the workings of these new benefit programs, the increased emphasis on physician-patient communication makes them very attractive. From the purchaser's perspective, they offer opportunities for high quality care and long-term cost savings.

In the press for economy in the provision of health care services, do you have any comments as to the impact on the quality of care?

Ensuring access to high quality care in Iowa must be a top priority. HMOs, PPPs, and man-

(Please turn to page 58)

QUESTIONS AND ANSWERS

(Continued from page 57)

aged care programs have very effective quality control features and focus on preventive care and improved communications. As all other states right now, Iowa must commit itself to developing better measurement tools for quality health care, particularly in the non-acute areas. Unlike some other states, there has been little evidence of patient "dumping" and other quality problems in Iowa as a result of new payment and benefit programs.

As you are able to read their emotions and acceptance of change, how do you assess the mood of Iowa physicians generally? Are they positive and upbeat — or simply accepting of the pressure for change?

In many Iowa communities, physicians are at the forefront of the changes occurring in health care delivery. We've witnessed an evolution in physician attitudes which today leans toward supportive interest in new cost management programs. The key to physician acceptance seems to be the ability to participate in the cost management process on a local level.

Given this changing milieu, what advice would you offer that Iowa physician who is basically interested in providing patient care and not particularly anxious to be involved in delivery mechanisms? Or is that person a relic of the past?

I don't think that kind of physician ever will become a relic of the past. In fact, quality-conscious, committed physicians generally are among the most interested in alternative delivery mechanisms because they emphasize intimate patient relationships.

For example, HMO benefits provide comprehensive inpatient and outpatient services without deductibles or co-insurance and the associated paperwork. Also, the departure from fee-for-service billing to a per-capita payment method eliminates patient claims filing and places the emphasis more on cognitive

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services not typically associated with fee-for-service billing. In an HMO, the physician receives regular reports on quality and cost effectiveness. *That's* the kind of paperwork most physicians are interested in seeing.

There are various alternative delivery schemes at different levels of development and implementation across the state. Are we seeing only the tip of the iceberg as to future alternatives?

PPPs and managed care programs remain relatively new to Iowa, so we expect quite a bit of development in these areas.

Preferred provider products, in particular, feature the best aspects of the traditional system, offering a broad choice of provider services but with financial incentives to choose the preferred group.

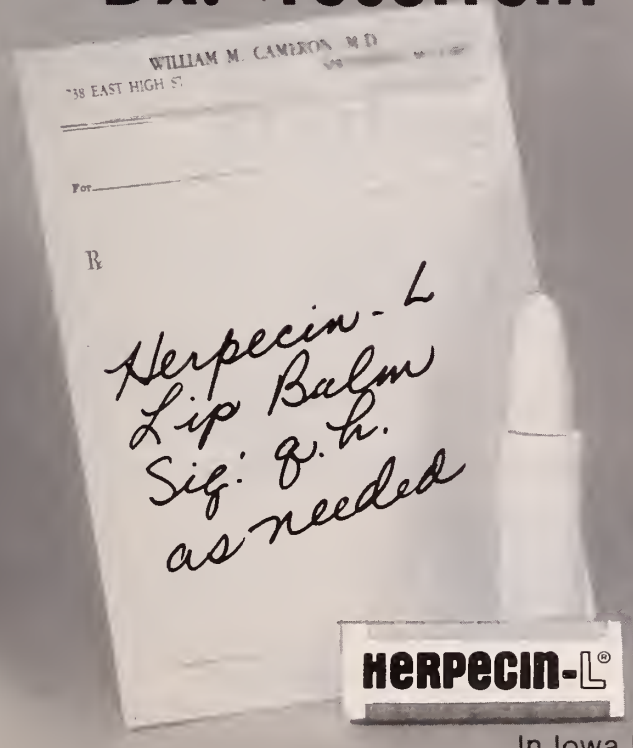
Though we also expect HMO development to continue at a rapid pace for a few years, there actually may be fewer HMOs serving a larger population — as the larger and more financially secure become dominant.

Any other comments you would like to make to Iowa physicians as they ponder and participate in what many regard as a dramatically changing health care environment?

Misconceptions and skepticism still exist about these new alternatives among some physicians. Our experience has been that the more information a physician has, the more appealing many of these concepts become. And since there are many different programs and models being explored in Iowa right now, it makes sense to understand the differences among them.

Even with the cost control successes we've experienced in Iowa, purchasers are still looking for relief from health care costs. Today, the physician has an opportunity to become highly involved in the design and implementation of cost containment programs.

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Maternal Serum Alpha-fetoprotein Screening: Report of a Pilot Project in Iowa

ROGER A. WILLIAMSON, M.D.,
JAMES W. HANSON, M.D., and
STANLEY S. GRANT, R.N., B.S.N.
Iowa City, Iowa

A pilot project was undertaken in Iowa to determine the feasibility and desirability of beginning widespread maternal serum alpha-fetoprotein screening. This project has determined this type of testing can be performed in an efficient and coordinated fashion where there are well informed practitioners and patients. The role of alpha-fetoprotein testing in detecting a number of high risk pregnancy situations has been validated in this population.

ALPHA-FETOPROTEIN (AFP) is a fetal-specific protein manufactured in the fetal liver. A fraction of AFP in fetal serum is present in the amniotic fluid. A much smaller fraction is present in maternal serum and can be measured in this fluid by means of a radioimmunoassay. Measurement of maternal serum AFP (MS-AFP) is recognized as a valid means of detecting pregnancies at risk for certain fetal structural abnormalities, principally neural tube and abdominal wall defects. Heretofore, an MS-AFP with concurrent ultrasound evaluation has been recommended for couples at a higher risk for a child with a neural tube defect (NTD). High risk factors include pregnancy of a diabetic mother, NTD in a second or third degree relative of a fetus, a previous child with isolated hydrocephalus, maternal valproic acid therapy or either parent with spina bifida occulta.

Impetus for beginning MS-AFP screening in pregnancies not at increased risk for a fetal NTD has been the generally favorable experience with this form of testing in the British Isles and in the large pilot projects conducted in the United States.[1,2] Another factor which has encouraged widespread screening is the FDA decision to allow uncontrolled release of the AFP testing kits.

Less appreciated than detection of NTDs, but of considerable importance, is the ability of MS-AFP screening to alert practitioners to high risk pregnancies in which the fetus does not have a structural defect. Persistent elevations of MS-AFP indicate a five-to-sixfold increased risk for premature labor, a growth retarded fetus or a stillborn.[3,4] There is also an

The authors are associated with the Departments of Obstetrics and Gynecology and Nursing at University of Iowa Hospitals and Clinics, Iowa City, Iowa.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF FEBRUARY 1986

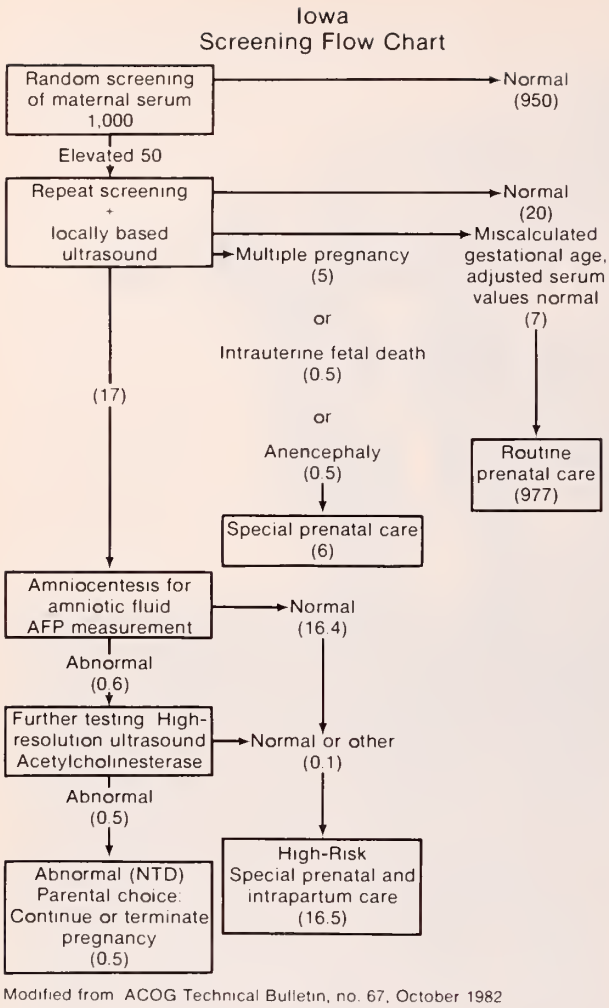


Figure 1. The accuracy of detecting a fetal neural tube defect is enhanced if the initial specimen is drawn between 15-18 weeks' gestation. Prompt communication between laboratory, tertiary facility and physician offices is essential to expeditiously resolve elevations of MS-AFP.

increasing body of evidence which suggests that a *low* MS-AFP may be associated with an increased risk for a couple to have a child with Down syndrome or some other chromosome abnormality such as trisomy 13 or trisomy 18.[5, 6]

Implementation of a Pilot Project

"A screening program should be established only where there is linked excellent interdisciplinary support among obstetrician, laboratory, clinical geneticists, ultrasonographer, and an identified program coordinator."[3]

Numerous planning meetings, several mailings to Iowa obstetricians and family practitioners and a series of educational presentations preceded the start of a pilot project. The program began in September, 1984 following endorsement of a pilot MS-AFP project by the Iowa Medical Society and a decision by the Birth Defects Institute of the State Health Department to fund the project. The tests have been performed at no charge to the patient at University Hygienic Laboratory.

Figure 1 reveals the protocol followed in this state, assuming an incidence of neural tube defects of 1 per 1000.[7] This has been modified from a technical bulletin released by the American College of Obstetricians and Gynecologists. The modification involves the recommendation of a locally based ultrasound at the time of an indicated repeat MS-AFP test. This shortens the screening process by approximately a week. Other programs have been obtaining a repeat specimen if the initial value is elevated, followed by an ultrasound evaluation if the second specimen is also elevated. This should reduce the psychological stress associated with this form of screening.[8]

An MS-AFP value of 2 multiples of the normal median for a given gestational age on the initial serum test is regarded as elevated. If the MS-AFP remains elevated at 2.5 multiples of the normal median and this elevation is unexplained by the ultrasound (i.e., showing the presence of multiple pregnancy, intrauterine fetal death, anencephaly or miscalculated gestation), an amniocentesis at a tertiary center for definitive measurement of AFP is recommended. It is anticipated between 1 and 2% of the screened population will be candidates for an amniocentesis. If there is a family history of a neural tube defect, an aminocentesis would be recommended at a lower cutoff value.

By means of this screening program, approximately 80% of all open neural tube defects will be detected, as well as more than 90% of all pregnancies associated with an anencephalic fetus. It is important participants in this screening realize about 15% of all open neural tube defects will not be detected because they will not be associated with an initial elevated MS-AFP. For this reason, we have continued to recommend an amniocentesis for couples who previously had a child with an NTD or if one parent has an NTD.

As mentioned, other structural defects in the fetus can elevate the alpha-fetoprotein. For this reason, careful ultrasonography at the time of amniocentesis is required. Figures 2 and 3 show

(Please turn to page 63)

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the findings by ultrasound one might anticipate with an NTD. A further evaluation required of an MS-AFP screening program is the ability to perform the acetylcholinesterase assay by gel electrophoresis.[9] Acetylcholinesterase is specific to neural tissue and, in conjunction with detailed ultrasonography, makes the possibility of a false positive amniotic fluid AFP exceedingly rare.

Results

Specimens have been received from practices over a large portion of the state. Of the 1,161 samples processed during the pilot project from 9/1/84 to 2/28/85, 62 have been repeat specimens. The number of repeats has been 5.6%, approximately 1 in 20. Seventeen amniocentesis procedures have been required, a rate of 1.5% of the screened population. Only 1 patient in 17 has declined an indicated amniocentesis. This is a low rate of refusal, suggesting patients have been well informed concerning the need for further screening tests should an elevation of MS-AFP occur. In other tightly controlled pilot projects, the incidence of refusal of an indicated amniocentesis has often been over 20%.[10]

During the pilot project, 1 fetus with an open spina bifida, 1 fetus with hydrocephalus and other anomalies, 1 fetus with gastroschisis and 3 sets of twins have been detected. The fetus with the neural tube defect had only a modest increase in amniotic fluid AFP, but the acetylcholinesterase assay was positive. This confirms the value of this test.

As indicated in Figure 1, the number of initial elevations, the number of patients undergoing amniocentesis and the number of defects detected could be predicted from the screening flow chart and the incidence of these anomalies in this population. Also, data from this project confirms the recognized association between elevations in MS-AFP and poor reproductive outcomes.

Discussion

The pilot phase of MS-AFP testing is nearing completion and this form of screening will be open to a wider group of patients. As this occurs, continued efforts will be made to increase physicians' and patients' understanding of this program.

(Please turn to page 64)

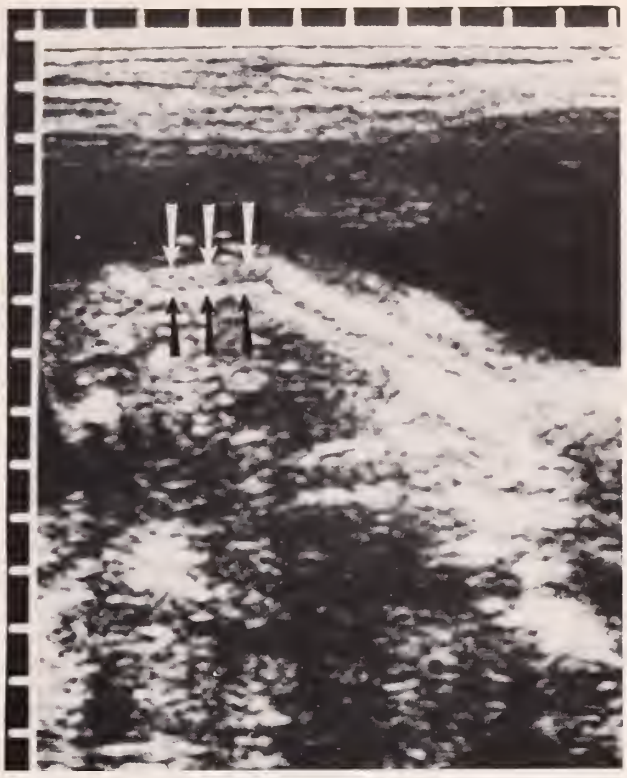


Figure 2. A longitudinal scan of a fetus at 18 weeks' gestation. The arraws demonstrate a splayed partian of lower tharacic and upper lumbar spine.

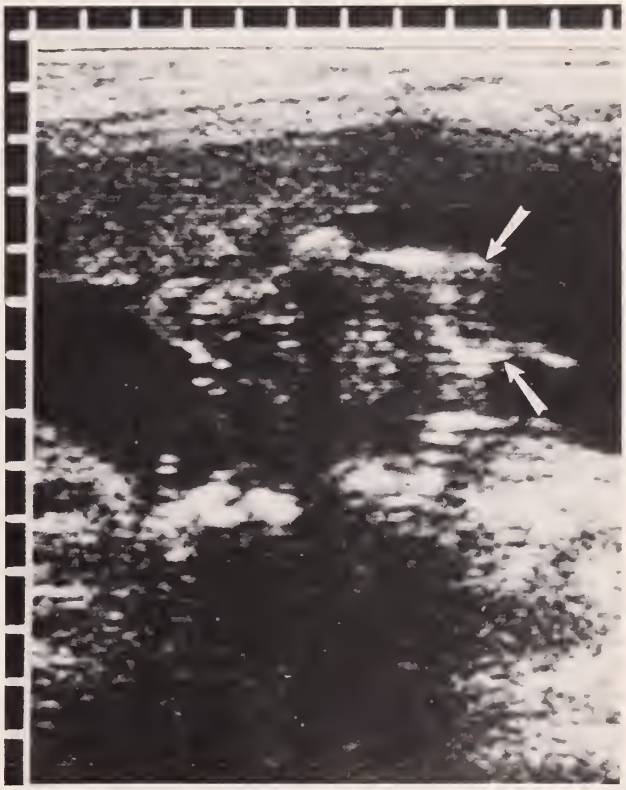


Figure 3. A transverse section through fetal abdamen reveals the apen spinal defect with widely separated pedicles (arraws).

Several aspects of this screening require emphasis. While NTDs and other fetal structural defects can be detected by MS-AFP screening, the majority of pregnancies with a persistent elevation of MS-AFP is not associated with a fetus with a structural abnormality. However, these pregnancies are at risk for numerous complications. Thus, this type of screening will indicate pregnancies that need to be followed more carefully. Specific recommendations may be forthcoming as we learn more about the significance of raised MS-AFP values.

There is another aspect of MS-AFP screening which will be followed closely. As indicated, several large retrospective studies have suggested a definite association between a low value of MS-AFP and fetuses with Down syndrome and other chromosome anomalies. If continued experience validates this observation, a low MS-AFP will also become an indication for an amniocentesis in some pregnancies.

Finally, though abortion is one option if a severe fetal structural abnormality is found, some couples will choose not to terminate the pregnancy. The value of screening for these couples will be access to early counseling and referral to a tertiary center for optimal postnatal care.

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Topic: Hepatobiliary Disease
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Place: jester Auditorium, Iowa Methodist Medical Center
Des Moines, Iowa

Moderator: Bernard D. Mouw, M.D., Surgical Teaching Staff, Iowa Methodist Medical Center

7:30 a.m.	Registration Continental Breakfast
8:00 a.m.	Welcome — Heinz S. Jacobi, M.D., President, Throckmorton Surgical Society
8:10 a.m.	Diagnostic Tests for Biliary Obstruction Steven E. Silvis, M.D., Professor of Medicine, University of Minnesota
8:30 a.m.	Management of Acute Cholangitis James H. Foster, M.D., Professor of Surgery, University of Connecticut
8:50 a.m.	Dissolution of Biliary Cholesterol Stones Johnson Thistle, M.D., Professor of Medicine, Mayo Medical School
9:10 a.m.	Intra-operative Choledochoscopy: Is it of value? David M. Nagorney, M.D., Asst. Professor of Surgery, Mayo Medical School
9:30 a.m.	Choledochoduodenostomy versus Sphincteroplasty Jack Pickleman, M.D., Professor and Chief of General Surgery, Loyola University
9:50 a.m.	Coffee Break
10:10 a.m.	Treatment of Retained Stones with E.R.C.P. Steven E. Silvis, M.D.
10:30 a.m.	Biliary Strictures-Surgical Treatment Jack Pickleman, M.D.
10:50 a.m.	Joseph B. Priestley Memorial Lecture: Surgical Authors — Pride, Prejudice and Responsibility Martin A. Adson, M.D., Professor of Surgery, Mayo Medical School
11:20 a.m.	Panel Discussion
12:00 noon	Pre-lunch — Meet the Faculty
12:15 p.m.	Luncheon — Jester Gymnasium

Moderator: James A. Coil, M.D., Director of Surgical Education, Iowa Methodist Medical Center

1:30 p.m.	Primary Sclerosing Cholangitis, James H. Foster, M.D.
1:50 p.m.	Congenital Cystic Disease of the Hepatobiliary System Robert T. Soper, M.D., Professor of Surgery, University of Iowa
2:10 p.m.	Pyogenic Liver Abscesses Louis D. Rodgers, M.D., Surgical Teaching Staff, Iowa Methodist Medical Center
2:30 p.m.	Intrahepatic Stones: Perspectives in Management David M. Nagorney, M.D.
2:50 p.m.	Coffee Break
3:10 p.m.	Portal Hypertension — Clinical Evaluation and Treatment William P. Mikkelsen, M.D., Clinical Professor of Surgery, University of Southern California
3:30 p.m.	Percutaneous Decompression of Benign and Malignant Biliary Obstruction Thomas Murphy, M.D., Dept. of Radiology, Iowa Methodist Medical Center
3:50 p.m.	Hepatic Tumors — Surgical Considerations Martin A. Adson, M.D.
4:10 p.m.	Panel
4:50 p.m.	Acknowledgments Tom D. Throckmorton, M.D.
5:00 p.m.	Adjournment

This course has been approved for 6 hours CME category I. For more information, call 515/283-6076.

Using the Minimal Weight Prediction Equations for Scholastic Wrestlers

ROBERT A. OPPLIGER, Ph.D.
Iowa City, Iowa

On recommendation of the Committee on Sports Medicine, the Iowa Medical Society Executive Council on November 14, 1985, approved this resolution: **Resolved,** *That the IMS support the concept of the wrestling weight formula (minimal body weight is one that contains no less than 5% body fat) as a guideline for determining minimal competitive body weight. This paper will give Iowa physicians more information on how the concept works.*

IN THE October 1985 issue of IOWA MEDICINE (Weight Prediction Equation Tested & Ready), we discussed the need for a minimal weight prediction equation and provided the research evidence to support the use of specific equations developed as part of the Iowa Wrestling Study. In this article, we will provide more details on how to complete the measurements and compute the minimal weight.

The techniques for measuring and the measurement sites used to compute minimal weight are not unique. They have been successfully used for more than 30 years. The measurement sites are located using anatomical landmarks, and the measurements are made using a standardized protocol. Care should be taken to make the measurement accurately. The specific details for measurement of the skeletal dimensions and skinfolds are shown in Tables I and II.

For all sites, duplicate measurements are made. In the protocol used by the Iowa Wrestling Study, the tolerance between the 2 measurements is 0.5 cm for skeletal dimensions and 5% for skinfold measurements. The readings are recorded as shown in the Tables. If the 2 measurements exceed the tolerance

TABLE I
SKELETAL DIMENSION SITES AND THEIR MEASUREMENTS

Height:
The subject stands with his back to the physicion's scole .25 and is instructed to inspire while the height is recorded to the neorest 0.5 inch.

Chest Diometer:
The subject stands with both honds on the crest of the ilium. The lowo Calipers ore then ploced in the oxillary region with the ends being ploced on the second or third rib. At the end af expiration, the measurement is obtained ond recorded to the nearest 0.1 cm.

Chest Depth:
The subject stands with the right hond behind his head. The Iowa Calipers is placed an the tip of the xiphoid pracess and over the vertebrae of the twelfth rib. The meosurement is then taken at the end of the expirotion ond recorded to the nearest 0.1 cm.

Bi-ilioc Diameter:
The distance between the mast lateral projections of the crests of the ilium is meosured using the Iowa Caliper ond recorded to the neorest 0.1 cm.

Bitrochanteric Diometer:
The distance between the mast lateral projections of the greoter trachonters is measured using the lowo Coliper ond recorded to the nearest 0.1 cm.

Wrist Diometer:
The distonce between the styloid processes of the rodium and ulno is measured using the Iowa Caliper and recarded to the neorest 0.1 cm.

Ankle Diameter:
The faot is ploced an a staal ar chair and the lowo Caliper is placed aver the molleali at an angle of 45° ond recorded ta the nearest 0.1 cm.

Dr. Oppliger is associated with the College of Nursing, The University of Iowa.

value, a third measurement is made, and the median value used as the correct measurment.

Tables III to V set forth the 3 equations validated by the Iowa Wrestling Study.* As described in the previous study, the correlations between the equations and minimal weight determined by hydrostatic weighing are high (> .93). Both the skinfold and 1972 skeletal dimension equation were shown to be valid. The 1985 skeletal dimension formula was validated on a more recent sample of wrestlers.

It should be remembered that the margin of error in these measurements is about 3%. Using the predicted minimal weight as a "hard and fast" rule would not be appropriate. When it was feasible, we have made all of the skinfold and skeletal dimension measurements and computed minimal weight by all three equations. This provides a basis for making a more accurate estimate of minimal body weight.

The Iowa Wrestling Study prediction equations offer a simple and scientifically-determined method for estimating minimal body weight. Employing these equations during the preseason would provide athletes with guidelines to minimize "weight-cutting."

TABLE II
SKINFOLD SITES AND THEIR MEASURMENTS

Chest:
The skinfold that is ablique to the midclavicular line is meosured over the pectorolis mojor muscle. The finol fold pasitian is mediol to the onteriar oxillary line. The meosurement is recorded to the neorest 0.5 mm.

Triceps:
The orm is ploced in a relaxed but extended positian. Then o verticol skinfold running parallel ta the length of the arm is measured midwoy between the ocromium ond olecornon processes. The measurement is recarded to the neorest 0.5 mm.

Scapulo:
The skinfold running parallel to the oxillory border of the inferiar angle of the scapulo is measured. The measurement is recorded to the nearest 0.5 mm.

Suprailiac:
A vertical skinfold is meosured at the site midwoy between the crest of the ilium and the twelfth rib at the midoxillory line. The meosurement is recorded ta the neorest 0.5 mm.

Abdominal:
A horizonal skinfold is measured approximotely 2.54 cm from the center af the umbilicus. The measurement is recorded to the neorest 0.5 mm.

Thigh:
The right foot is ploced on o 12-inch stool. A vertical skinfold is meosured on the thigh midwoy between the onterior superior spine of the pelvis and the potellar tendon. The measurement is recorded to the nearest 0.5 mm.

TABLE III
THE 1985 MINIMAL BODY WEIGHT PREDICTION EQUATION FOR IOWA SCHOLASTIC WRESTLERS

Height	____ (inches)	× 1.672	= _____.___
			+
Chest diometer	____ (cms)	× 3.809	= _____.___
			+
Chest depth	____ (cms)	× 4.109	= _____.___
			+
Bi-iliac diometer	____ (cms)	× 1.966	= _____.___
			+
Bath wrist diameters	____ (mm)	× 5.243	= _____.___
			−
Suprailiac skinfold	____ (mm)	× 0.248	= _____.___
TOTAL			= _____.___
Regression canstant			− 263.824
Minimal Weight (lbs)			= _____.___

*NOTE: A microcomputer program suitable for use on the Apple microcomputer which computes minimal weight by any of the 3 methods is available free upon request to the author.

TABLE IV
THE 1972 SKELETAL DIMENSION PREDICTION EQUATION FOR MINIMAL BODY WEIGHT

_____.___	Height (inches) × 1.84
+ _____.___	Chest Diometer (cms) × 3.28
+ _____.___	Chest Depth (cms) × 3.31
+ _____.___	Bi-iliac Diameter (cms) × 0.82
+ _____.___	Bitrachanteric Diameter (cms) × 1.69
+ _____.___	Sum of Bath Wrists (cms) × 3.56
+ _____.___	Sum of Both Ankles (cms) × 2.15
− 281.72	Equation Constont
= _____.___	MINIMAL BODY WEIGHT (LBS)

TABLE V
THE SKINFOLD PREDICTION EQUATION FOR BODY FAT PERCENTAGE

_____.___	Chest SF × 0.1483
+ _____.___	Triceps SF × 0.0769
+ _____.___	Subscapulor SF × 0.0746
+ _____.___	Suproiliac SF × 0.1602
+ _____.___	Abdaminal SF × 0.1524
+ _____.___	Thigh SF × 0.1020
+ 3.15	Equation Canstant
= _____.___	%Fat Percentage

$$\text{Minimol Weight (lbs)} = \frac{\text{Weight (lbs)} \times (1 - \%\ \text{Fot}/100)}{0.95}$$

Reference

Oppliger, R.A. and C.M. Tipton. Weight prediction equation tested and available. IOWA MEDICINE 75(10):449-453, 1985.



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Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



PHYSICIAN: NOT VENDOR

I BRISTLE AT being called a vendor. I am a physician. My efforts are dedicated to providing the best health care I can to my patients. With the advent of third-party payors has come the term "vendor-payment." This is unfortunate. The medical profession should resist this term vendor which originally referred to hawkers who peddled their wares from a horse-drawn wagon. The medicine-man shows of earlier decades are history. We should not be equated with such hustlers. We are professionals with years of formal education and experience. Unfortunately, we have been designated vendors by the government as well as insurance companies.

The medical profession has a long history of dedicated service. We know there is occasional impropriety and wrong-doing by some of our colleagues. To be sure, we are fully human and subject, as all, to temptations which some are unable to resist. Yet through the years we have risen above these isolated failings of some to earn the respect of most people.

There is still a tide to overcome, however, for there are those who burden us with so many rules and regulations. These impositions serve only to take valuable time and effort which should be devoted to serving patients or refreshing ourselves for the next day's duties.

The plethora of paper and forms has now become part of our lifestyle. Has all this paperwork resulted in better care for our patients? No! Records have become bulky and unwieldy requiring increased storage and retrieval. True, computers can alleviate the storage problem, but does the patient really benefit? Record keeping is needed to provide sufficient data to satisfy medico-legal dictates, but enough is enough. Most of the "paper jungle" concept originated with World War II. Military and governmental services thrive on paper. It is their sustenance, providing employment for many and necessitating money to cover supplies, machines and storage. Unfortunately, the private non-governmental sectors are similarly lost in the record maze. Our profession is the victim of this bureaucratic era.

"Wouldn't you like to be a physician again? Wouldn't it be great to serve your patients rather than a paper jungle? Yet, I do not see a clear solution that would be equitable, so it would seem we will have to hire another person, buy another typewriter. . . ."

Each "vendor-payment" plan has devloped its unique forms, rules and regulations. Each HMO, PPO, or other form of third party payor has its separate routine. Some accept "superbills," others frown on them. Physicians have had to increase their payrolls to cope with this epidemic. It seems the problem becomes more complex as each year passes, and the future looks ever more bleak.

Wouldn't you like to be a physician again? Wouldn't it be great to serve your patients rather than a paper jungle? Yet, I do not see a clear solution that would be equitable, so it would seem we will have to hire another person, buy another typewriter or computer terminal, and lease more storage space. Whatever, we can still resist the designation of "vendor." I prefer to be a physician. I want to serve my patients as capably as I can; then I will serve my own. — M.E.A.

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1986 FAMILY PRACTICE REFRESHER COURSE

A STIMULATING AND PRACTICE-ORIENTED opportunity to learn what's new and brush up on what's old will be available to family physicians March 4-7 in Iowa City.

That's the date for the 1986 University of Iowa Refresher Course for Family Physicians. This conference originated in 1946 as World War II physicians resumed private practice. It occupies a premier spot in the annual line-up of continuing medical education events.

Accredited by the Accreditation Council for Continuing Medical Education, the conference will emphasize application of knowledge and skills to family practice. The format will include brief lectures, panels, small-group discussions, workshops and question and answer sessions. Registrants' spouses are invited to all programs.

The conference should prove especially useful to those preparing for examination by the American Board of Family Practice. As in the past, physicians may become recertified in basic cardiopulmonary resuscitation.

As a special option, the American Lung Association of Iowa and the U of I Institute of Agricultural Medicine will co-host "Agricultural Respiratory Disease" Monday evening, March 3, from 7:30-9:30 p.m. The purpose of this program is to review state-of-the-art information on the recognition, diagnosis, treatment and prevention of respiratory diseases.

Twenty-six hours of Category I credit is allowed toward the AMA Physicians' Recognition Award for full attendance. The American Academy of Family Physicians and the American Osteopathic Association award the same credit. Nurses can earn 0.6 CME units through a March 5 Spring Office Nurse Conference. The University of Iowa will award 1.4 education credits for the 10th Annual Advanced Cardiovascular Nursing Conference March 6-7.

The 1986 Family Practice Refresher Course offers a wide range of topics including:

- Respiratory Hazards from Specialized Agricultural Structures
- Clinical Uses of Beta-blockers and Calcium-Channel Blockers
- Vaginal Birth After Caesarian
- Principles of Drug Use in the Elderly
- When, Where and How to Refer a Child You Think Has Cerebral Palsy
- Pediatric-age Heart Murmurs (with simulator)
- What's New in Agriculturally Related Illness (Besides Anxiety and Depression)?
- AIDS: Biology and Psychology of a Contemporary Plague
- Marvel (?) #1: Radial Keratotomy
- Coping With Substance Abuse
- Hearing Loss and Hearing Aids
- Rehabilitation of the Injured Athlete
- Hormonal Therapy of Menopause
- Update on Rx of Acute MI — Those First Minutes
- How To Make Sense of "Spells"
- Marvel #2: Laser Treatment of Bladder Tumors
- Easily Missed Fractures
- Important Issues for Diabetic Patients
- Stroke: Current Therapy
- Counseling in Times of Grief

For more information about the Refresher Course for Family Physicians, contact the Office of Continuing Medical Education, U. of I. College of Medicine, Iowa City, Iowa, 52242 or call 319/353-5763. The program begins Tuesday, March 4 at 8:15 a.m. and ends Friday, March 7 at 3 p.m.

U. of I. Upcoming CME Programs

March 19	Diet Therapy U.S.A.
April 4	Intensive Insulin Therapy
April 8-9	Annual Great Plains Organization Perinatal Conference (Des Moines)
April 17-19	Third Annual Hawkeye Sports Medicine Symposium
April 18-20	Iowa Medical Society Scientific Meeting (Des Moines)
April 22, 24	Physical Assessment: Valvular Heart Disease
May 16	Iowa Cardiology
May 20-23	Cardiology Today
June 19-20	American Society for Bariatric Surgery

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_____	_____	**I can obtain 10% to 11% tax-deferred interest on my existing cash values.**
_____	_____	**I can withdraw my cash tax-free without charge.**
_____	_____	**I have maximum protection from my existing policies.**

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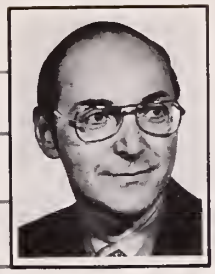
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



THE CME OF WHAT'S OLD

PROBABLY the most frequently stated purpose or justification of CME is "to learn new information." I don't know a very good means of quantifying — or denying — that assertion, but a substantial amount of CME, maybe more than generally acknowledged, serves to remind us what is old that is yet true. That is, either it adds emphasis that the old is *still* true, or it reminds us of something widely forgotten.

An example: the September, 1985 issue of the *Journal of the American Academy of Dermatology* contains a 2-page report of two cases under the title, "Extragenital Syphilitic Chancres." The reason: "to emphasize this unusual manifestation of a disease known for protean expression." One of the chancres was located on the skin of the chin and the other at the edge of the anus. Although there was even less syphilis seen during the years of my residency in dermatology (1958-61) than today, it still was considered a vital part of our knowledge base. (It was only in 1977, for example, that the Department of Dermatology and Syphilology at The University of Iowa had its name formally reduced to the first three words.) And so I couldn't help thinking, when I saw this new article, "That's nothing new, everybody knows that, why did the editor accept it?"

And then in the same mail came a list of new acquisitions in our Health Sciences Library, including a note that our rare book benefactor, Dr. John Martin, had given a first edition of the 1887 monograph *Syphilis* by the great Victorian syphilologist, Jonathan Hutchinson, his memory yet preserved eponymonically by Hutchinson's teeth and Hutchinson's triad. Wondering what was known in 1887 about extragenital chancres, I found on page 100 a discussion of what he called "erratic chancres *(syphilis sine coitu)*." He mentioned (and showed with splendid colored drawings) chancres of the periungual area (especially frequent on midwives), on the finger pulp of a dentist, on the nipple, in vaccinations, on the eyelid and the circumcision wounds of newborns. He further mentioned seeing the primary sore in the middle of the sole of the foot, on the palm, on the scalp and face, in the ear, nose, and skin of the chin at some distance from the lip. He claimed to have seen them also on the tongue, tonsil and even the conjunctiva.

OUR WORDS CHANGE, along with our concepts. A chancre at the anus may literally be extragenital, but I would think not nowadays extraordinary (pronounced with 5 syllables as Samuel Johnson directs in his 1755 dictionary — "generally pronounced *extrordinary*, whereby the *a* is liquified into the *o*" — and suggesting a circumstance more extreme than if it were said with 6 syllables: extra-ordinary). Even if extra-ordinary (with 6 syllables and meaning other-than-usual), perianal chancre may safely be assumed (my assertion, anyway) to be sexually acquired (not *syphilis sine coitu*). Although a straight-laced Victorian of Quaker upbringing, Hutchinson was the leading syphilologist of his age and must have encountered much that made him wince. His terse comment: "In a few instances erratic chancres may result from immoral practices."

(Please turn to page 79)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW



Reynold Spector, M.D., Editor

THE EFFECT OF DIETARY PROTEIN ON DRUG CLEARANCE

IN MANY PATIENTS, dietary protein intake may vary significantly because of periodic changes in appetite, dietary preferences, severity of underlying disease, or in the presence of catabolic states (e.g., wound healing, infection, or metastatic cancer). This review will summarize representative, controlled clinical trials and clinical significance of the effect of dietary protein intake on the hepatic and renal clearance of drugs. There are several excellent reviews of this topic.[1, 2, 3]

Methodologic Considerations

The basic design in trials studying the effect of dietary protein on drug clearance has been to place normal, healthy subjects on defined diets of varying protein (or amino acid) composition while keeping total caloric intake and all other variables as constant as possible. In most studies, dietary protein is expressed as the percent of total daily caloric intake, normal being 15%.[4] After the subject has been on the defined diet for a period of time (usually 1 to 2 weeks), a drug is administered and its clearance determined. The subject's diet is then changed and the clearance of the drug is remeasured on the new diet. When hepatic metabolism is being studied, the model drugs used (usually antipyrine, theophylline) are predominantly metabolized by the hepatic cytochrome P450 mixed-function oxidase complex. It should be noted that there are multiple isoenzymes of this enzyme complex in the liver, each of which participates to different extents in the oxidation of a given drug. This makes extrapolation of results to other drugs hazardous. Nevertheless, valuable general information about hepatic drug metabolism and specific information regarding the metabolic clearance of the model drugs studied can be obtained from these studies.

Dietary Protein and Hepatic Clearance

To study the effect of chronic dietary protein intake on the metabolic clearance of antipyrine and theophylline, Kappas *et al.* placed normal males on a high protein (44% protein) or low protein (10% protein) diet for 2 weeks. Metabolic clearance of both antipyrine and theophylline increased by a factor of approximately 1.5 (range 1.0-1.9) on the high compared to the low protein diet.[5] In another study, varying the relative proportions of carbohydrate and fat while keeping the proportion of dietary protein constant did not change the metabolic clearance of either compound.[6] Thus, it appears that the metabolic clearance of these model drugs increases with increasing dietary protein intake.

To study the effect of acute changes of amino acid intake (e.g., to mimic the relatively acute changes in nutrition that occur in hospitalized patients), Pantuck *et al.* studied antipyrine clearance under various conditions in normal males. Metabolic clearance increased by a factor of 1.24 (range 1.02-1.71) when subjects were changed from intravenous dextrose (440 ca-

(Please turn to page 76)

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lories/day) without any other dietary supplementation to intravenous amino acids (480 calories/day) over a period of 24 hours.[7]

Before discussing the broad implications of these studies, 2 reservations must be mentioned regarding the interpretation of these results. First, as mentioned, the hepatic mixed-function oxidase complex may oxidize theophylline and antipyrine by different isoenzymes contained in the enzyme complex. At least 10 different isoenzymes have been identified in mammalian liver to date.[1] Therefore, the diet-related changes observed cannot necessarily be extrapolated to other drugs. Second, results in normal volunteers may not apply to hospitalized patients or patients with disease.

With these reservations, there are 2 implications of these studies. First, patients taking theophylline may require dosage adjustment if their dietary intake of protein changes. Second, patients on prolonged intravenous dextrose solutions without protein or amino acid supplementation may metabolize certain drugs more slowly than during amino acid supplementation (e.g., hyperalimentation).[8] It is noteworthy that the effect of dietary protein or amino acid supplementation on drug metabolism is highly variable between individuals.

Dietary Protein and Renal Clearance

Dietary protein intake has a significant effect on renal plasma flow, glomerular filtration rate (GFR), and creatinine clearance. Creatinine clearance decreases 30% during a very low-protein (5%) compared to a high-protein (40%) diet.[9] Similar effects have been observed in children with protein-calorie malnutrition.[2] Thus, drugs significantly excreted by glomerular filtration (e.g., digoxin, aminoglycosides, lithium, chlorpropamide, procainamide, N-acetylprocainamide) may be cleared more slowly in patients on a low-protein diet or in the protein-calorie malnourished patient.[2] However, well-designed trials in this area are lacking.[3]

Recently the effect of dietary protein on renal clearance of oxypurinol, the major active metabolite of allopurinol, was studied.[9] Oxypurinol is excreted primarily by renal mechanisms and because of its extensive renal tubular reabsorption, oxypurinol has a long plasma half-life (13-18 hours) in patients with normal renal function and on normal protein diets.[9] On a high-protein diet (270 grams protein per day; 40% of calories), the clearance of oxypurinol was similar to that in subjects on a normal diet. However, on a low-protein diet (19 grams protein per day; 5% of calories), the renal clearance was decreased to approximately one-third normal and the half-life of oxypurinol increased nearly threefold.[9] This was due to a net increase in the renal tubular reabsorption of the drug independent of changes in GFR.[9] Since the accumulation of oxypurinol in plasma has been associated with serious toxicity and death in patients taking allopurinol, the dose of allopurinol may need to be reduced in patients on low-protein diets, in patients with renal failure, and possibly protein-calorie malnourished patients.[10]

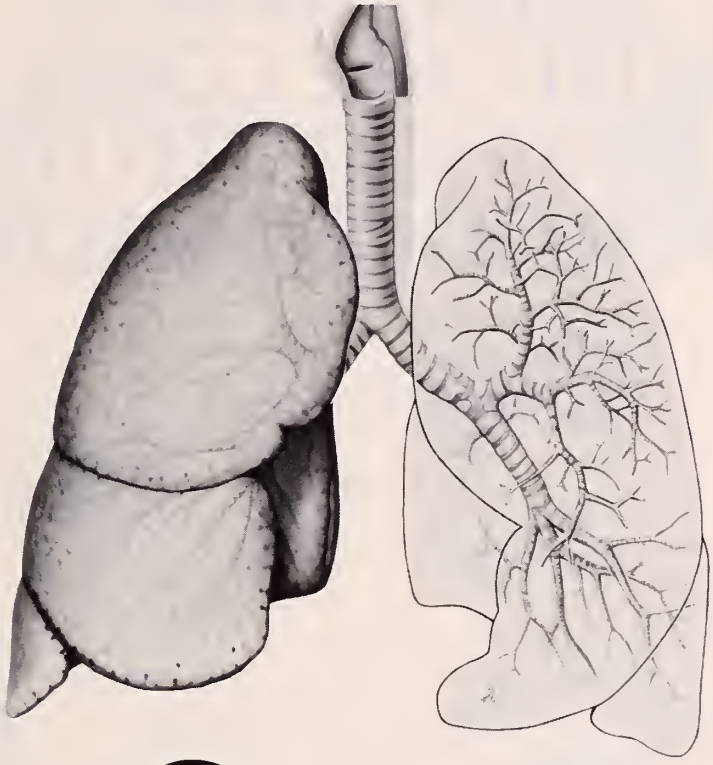
Conclusion

Dietary or amino acid restriction decreases the hepatic clearance of antipyrine and theophylline in normal volunteers. Whether these results can be extrapolated to other drugs metabolized by the cytochrome P450 mixed-function oxidase system needs to be answered by further studies. Until then, it is prudent to consider the possibility of impaired hepatic excretion of other similarly metabolized drugs in patients receiving inadequate protein or amino acid supplementation or patients with protein malnutrition secondary to catabolic states such as metastatic cancer, serious infection, or trauma (e.g., burns, surgery).[8]

Dietary protein restriction would be expected to decrease the clearance of drugs cleared by glomerular filtration. Furthermore, the renal clearance of oxypurinol is markedly decreased by protein restriction secondary to a change in tubular function. Whether this occurs for other drugs that are weak acids remains to be studied. Until further studies are done on more drugs, the prudent clinician should be aware of the potential changes in the renal and hepatic clearance of all drugs in protein-deprived states as well as the marked interindividual variability of the response to such protein-deprivation. — WILLIAM G. BERLINGER, M.D., *Assistant Professor of Internal Medicine.*

(Reference list appears on page 79)

Consider the causative organisms...



Ceclor®
cefaclor
250-mg Pulvules® t.i.d.

offers effectiveness against the major causes of bacterial bronchitis

H. influenzae, *H. influenzae*, *S. pneumoniae*, *S. pyogenes*
(ampicillin-susceptible) (ampicillin-resistant)

Brief Summary Consult the package literature for prescribing information.

Indications and Usage Ceclor* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae* and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins), therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: *General Precautions* — If an allergic reaction to Ceclor* (cefaclor, Lilly) occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest* tablets but not with Tes-Tape* (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy — Pregnancy Category B — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor* (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic — Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[0617B2R]

Note: Ceclor* (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

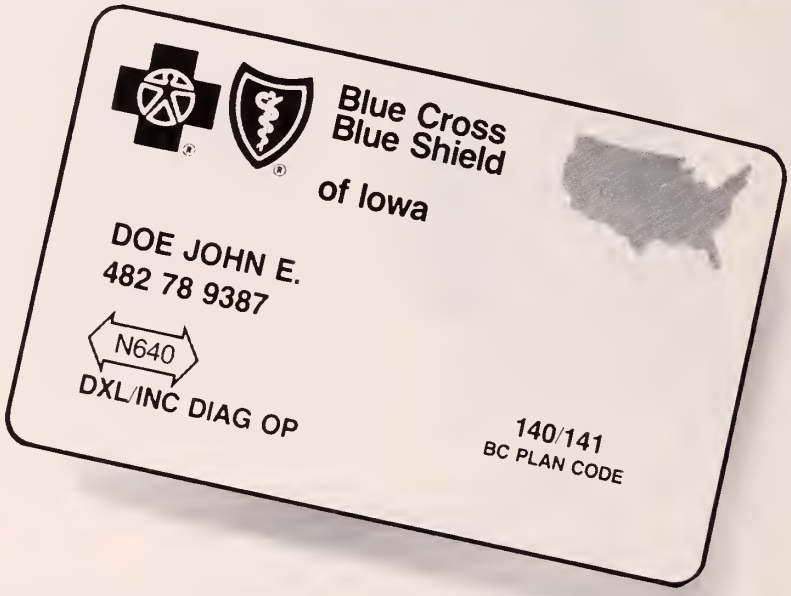
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DRUG THERAPY REVIEW

(Continued from page 76)

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OUR MAN IN EDUCATION

(Continued from page 73)

He was exceedingly fond of referring to the syphilitic "taint" and to a causative "virus." Those terms were still current in 1887 when there was yet no certainty that syphilis was an "infection" caused by specific "bacteria." That proof came in 1905. But Hutchinson showed his prescience in 1876 when he said (using the botanical term "cryptogamic" which I found to mean "without leaves or flowers"):

With regret I admit I have never seen with my outward eye the cryptogamic germ-poison of syphilis; but to my mind's eye it is as certainly present as if I had. Someone will see it some day, for it is beyond doubt that it must be there.

All this reinforces the view that CME is not just to expose physicians to the new, but to reiterate what of the old remains correct. As a program title, it's catchy in this form: "What's New, and What's True of What's Old."

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

LICE & SCABIES CONTROL

LICE AND SCABIES continue to plague Iowans. These head lice are predominantly a problem for children in day care centers and grades K-3. Scabies is classically a problem of children and sexually active young adults. It is also common among residents of nursing homes. Both parasitic conditions are transmitted through close contact and extensive hands-on care.

Head lice can be controlled and managed at day care sites or schools when detection programs are instituted. (This is not to imply that transmission occurs exclusively in schools.) Ideally, when lice are found all children in the school should be screened in addition to family members of confirmed cases. Rescreening at weekly intervals will shorten the duration of school outbreaks. Parents should be advised about the problem and requested to obtain prompt treatment and inspection of other family members.

Treatment should be instituted with any licensed pediculicide, most commonly 1% lindane, available by prescription. Pyrethrin products are available over-the-counter and are considered equally effective. It may be desirable to pre-shampoo before use of a pediculicide. Dead lice and nits (eggs) should be combed out after treatment. A second treatment is recommended 7 days later.

Treatment failures do occur; this indicates resistance to the insecticide or suggest these agents are not 100% ovicidal. Other "treatment failures" are due to infestation from an active case or the appearance of nits on the hair. They are rarely due to transmission from an environmental source. Extensive environmental spraying is not indicated. Laundering of bedding and clothing is necessary. Personal articles such as combs and brushes should be disinfected by soaking for one hour in 2% Lysol solution or in hot water (150°F) for 5-10 minutes.

Scabies in Nursing Homes

Scabies is a more serious problem for nursing homes and hospitals because the mite *(Sarcoptes scabiei)* cannot be observed without magnification. These facilities provide hands-on care and this increases the risk of secondary transmission to staff and tertiary transmission to other patients or residents.

Recognizing scabies in the institutional setting is essential to management and control. Patients or residents with persistent pruritus who do not respond to conventional therapy may have scabies. In addition, patients with extensive crusting or scaling of the skin, coupled with varying degrees of pruritus, may be infested. Patients in the latter category may have crusted or keratotic scabies, which are highly infectious to staff. Patients at high risk to this form of scabies include those with chronic disease such as cancer and immunosuppressed conditions. Elderly and mentally retarded patients are also at risk.

A diagnosis of scabies can be confirmed with skin scraping and is the key to recognizing an outbreak. Skin scraping will indicate the degree of spread and determine the efficacy of therapy. This procedure is as simple as it is essential. Standard references call for applying mineral oil or microscope immersion oil to a

(Please turn to page 82)

This information on public health matters is furnished and sponsored by the Iowa State Department of Health.

December 1985 Morbidity Report

Disease	Dec. 1985 Total	1985 to Date	1984 to Date	Most Dec. Cases Reported From These Counties
Aids	1	14	0	
Amebiosis	6	58	68	Scattered
Brucellasis	0	5	6	
Chickenpax	625	6515	7530	Scattered
Campylabacter	15	311	337	Scattered
Cytomegolavirus	1	15	12	Polk
Eoton's Agent infection	2	10	34	Block Hawk, Pattawottomie
Encepholitis, virol	0	30	57	
Erythema infectiasum	0	0	51	
Gastraenteritis (GIV)	1891	15977	14197	Scottered
Giordiosis	40	517	403	Scottered
Hepotitis, A	1	55	60	Kassuth
Hepatitis, B	1	92	108	Cass
Hepatitis, Non A-B	2	17	20	Johnson, Polk
Hepatitis type unspecified	0	8	10	
Herpes Simplex	92	1210	932	Scottered
Herpes Zaster	0	0	2	
Histaplasmasis	0	19	19	
Infectiaus mananucleasis	22	193	182	Scottered
Influenzo, lab confirmed	0	170	176	
Influenzo-like illness (URI)	3734	38685	41039	Scottered
Legianellasis	0	13	4	
Molorio	1	3	2	
Meningitis				
oseptic	8	61	67	Scattered
bacteriol	9	138	124	Scattered
meningacaccol	0	9	23	
Mumps	2	19	26	Polk
Pertussis	3	34	15	Polk, Story
Robies in onimals	8	150	150	Scottered
Reye Syndrome	0	4	2	
Rheumatic Fever	0	4	0	
Rubello (Germon measles)	0	1	1	
Measles	0	0	0	
Salmanellasis	4	266	247	Linn, Toma, Waadbury
Shigellosis	1	19	98	Muscotine
Taxic Shack Syndrame	1	9	13	Cerro Garda
Tuberculosis				
tatol ill	7	60	68	Scattered
bact. pas.	7	56	62	Scattered
Typhoid Fever	0	3	0	
Venereol diseases:				
Gonarrhea	188	4301	4574	Scattered
Syphilis	2	20	11	Von Buren, Woadbury
Chlamydia	145	150	0	Scottered

Other Non-Repartable Diseoses: Ascaris — 1, Davis, 2, — Jahnson, 1, Webster; Trichuris Trichiuro — 1, Jacksan, 1, Stary; Ureaplasmo Urealyticum — 1, Block Hawk, 1, Dubuque, 10, Jahnsan.

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lesion or placing oil on a scalpel blade. The blade is held at a right angle to the skin surface and the area is scraped vigorously until superficial skin tissue is removed. Material adhering to the blade is transferred to a microscope slide and diluted with additional oil if necessary. A cover slip is applied and the specimen is examined under low power. The slide should be examined for mites or distinctive eggs and scybala (fecal pellets).

In institutional settings, patients or staff who have the most lesions should be evaluated first. It is also desirable to scrape papules or burrows that have not been excoriated. Detailed examination is necessary to detect burrows. If the number of lesions permits, a minimum of 6 slides should be obtained from a patient. This increases the probability of demonstrating a mite. While the hands and lower arms are often common sites for mites, recent experience indicates that the shoulders, back, and abdomen are better sites from which to recover mites, especially on elderly patients.

Keratotic Scabies

Control measures depend upon the nature of the institution and the form of scabies present. The rare case of keratotic scabies which occasionally develops within institutions represents a highly infectious reservoir. Atypical crusted scabies or intermediate forms of scabies also have a large number of mites. Patients usually exhibit extensive pruritus and are moderately infectious, especially in nursing homes. These forms of scabies require patients to be temporarily isolated or have their activities restricted until treatment is effective. In treating affected patients, nursing personnel should wear disposable gloves and gowns sprayed with insect repellent to prevent mite penetration and transmission.

Keratotic scabies should be treated with keratolytic creams to soften scaliness and permit penetration of scabicides. Treatment with specific scabicides should be individualized and repeated until the condition is eradicated. This usually requires sequential treatments using all 3 standard preparations: 1% lindane lotion, 10% crotamiton cream and 10% sulfur ointment. Furniture, bedding, and clothing require vacuuming, cleaning and laundering. Crusted scabies present the hazard of transmission via fomites, underscoring the need for cleaning and spraying of the environment with an insecticide such as a pyrethrin.

Other cases of scabies can be managed with 2 treatments one week apart. The second treatment will destroy any mites or eggs that survive the first treatment. Depending on the scabicide, one treatment consists of either a single application of 1% lindane lotion, 2 daily applications of 10% crotamiton cream/lotion or 3 daily applications of 5 to 10% sulfur ointment. Nursing home residents generally require more intensive therapy than non-institutionalized populations. For patients whose scrapings are positive, 2 treatments are recommended one week apart. These should be followed by a third treatment a week later using a different scabicide. Clinical cases whose scrapings are negative are treated twice with one agent, spaced one week apart. In all treatments, patient fingernails should be clipped and a scabicide applied to the fingertips under the nails. This area can harbor excoriated mites acquired from scratching infected sites. The face and scalp should be treated among persons with large numbers of mites, especially bedridden patients. Staff should wear disposable gloves when applying scabicides to prevent cross-contamination and percutaneous absorption of lindane.

Mass treatment of unaffected patients and staff should be considered in any institutional setting. Generally, if scrapings from 2 or more patients are positive and one or more staff personnel exhibit pruritus or show positive scrapings, it is imperative to administer mass treatment or prophylaxis. We suggest treatment of all patients/residents of a ward or floor with common staffing. However, judgment should also be exercised. For staff prophylaxis, personnel with little or no "hands-on" exposure, such as dietary or housekeeping staff, may be omitted. One treatment is usually satisfactory, but should be increased to two treatments one week apart if pruritus is present. Routine cleaning and laundering of bedding, except for cases of crusted scabies, is adequate.

Patient Education Materials

Client education materials on head lice and references on scabies are available on request from the Disease Prevention Division, Iowa State Department of Health. *Prepared by Russell W. Currier, D.V.M., Deputy Commissioner for Disease Prevention, Iowa State Department of Health*

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* **WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: **Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired.** If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

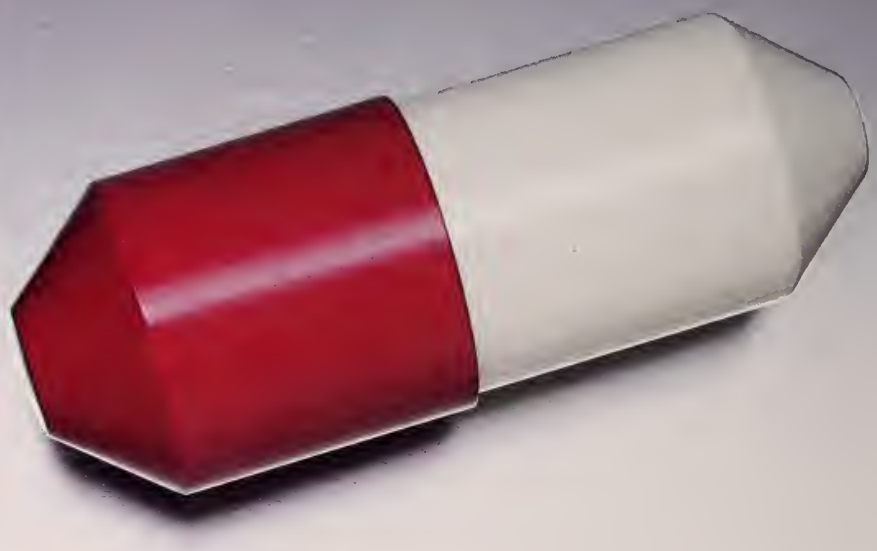
Supplied: **'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.**

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RECENT BOOKS

Davis, Joel, 1984, *Endorphins: New Waves in Brain Chemistry,* Dial Press, Doubleday and Co., Inc., Garden City, N. Y., $16.95. The bibliography would indicate a considerable amount of research by the science-writer author in this exciting area of neuroscience. This is interesting reading, though not a scientific treatise.

Thomas, Gordon, 1984, *The Operation,* Doubleday and Co., Inc., Garden City, N. Y., $14.95. Another saga of the "magic" of brain surgery.

Hazelton, Lesley, 1984, *The Right to Feel Bad,* Dial Press, Doubleday and Co., Inc., Garden City, N. Y., $14.95. The author-psychologist discusses depression in a straight-forward manner. "We have become so terrified of our own depression that we refuse to face it. It has been made into a fearful void — that we must avoid — we have made an ogre out of a normal condition."

Streiker, Lowell D., 1984, *Mind-Bending: Brainwashing, Cults, and Deprogramming in the 80's,* Doubleday and Co., Inc., Garden City, N. Y., $14.95. Dr. Streiker draws upon his expertise in the study of cult phenomenon to give us an inside view of these religious sects; how they come into being and how they operate.

Kaye, Kenneth, 1984, *The Mental and Social Life of Babies: How Parents Create Persons,* University of Chicago Press, Chicago, Illinois, Paperback, $9.95. The first-born in most families is an experimental model. Subsequent children profit by the experiences of the parents gleaned from the initial experiment. The parents are responsible in large measure for the child's developing competence and sense of self.

Jackson, Judith S., 1984, *The Greatest Good: A History of the John A. Hartford Foundation,* The John A. Hartford Foundation, Inc., New York, N. Y. The history of a private philanthropy, established in 1929, which lends its support to improving the organization and financing of health care, promoting efficient energy use, improving health care needs of the elderly, and assisting early career development of physician researchers.

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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. John F. Murphy, Boone, recently received the Iowa Academy of Family Physicians "Educator of the Year" award. Dr. Murphy was recognized for his contribution to medical education of family physicians in Iowa. During the past 14 years, he has hosted 64 U. of I. medical school preceptees. . . . **Dr. Bhalchandra Rambhai Patel** has joined **Dr. Roy E. Fell** in surgery practice in Mount Ayr. A native of India, Dr. Patel received his medical training in his native country and at the Royal College of Surgeons in Edinburgh and Royal College of Physicians and Surgeons in Glasgow, United Kingdom.

Dr. Max E. Olsen, Minden, was honored at a surprise 60th birthday party given by local volunteers. The occasion also marked Dr. Olsen's 35 years in medical practice in Minden. A plaque acknowledging his years of community service was presented to Dr. Olsen. . . . **Dr. David J. Lofgren** has joined the medical staff at Clarke Medical Clinic in Osceola. Dr. Lofgren received the M.D. degree at the University of Minnesota School of Medicine and had his family practice residency in Cedar Rapids. Prior to locating in Osceola, Dr. Lofgren was in practice in Horicon, Wisconsin,

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Creston, Iowa and Delavan, Illinois. . . . **Dr. Robert T. Melgaard,** Dubuque, is president-elect of the American Group Practice Association, a Washington-based national trade association representing group practice physicians and administrators. . . . **Dr. Robert Patterson** has been appointed director of the Student Health Center at Iowa State University in Ames. Dr. Patterson received the M.D. degree at the U. of I. and joined the ISU staff in 1979. Prior to locating in Ames, he was in private practice in Conrad.

DEATHS

Dr. John F. Kanealy, 71, longtime Cedar Rapids physician, died November 22 at Mercy Hospital in Cedar Rapids. Dr. Kanealy received the M.D. degree at U. of I. College of Medicine; interned at Santa Barbara, California and then returned to U. of I. for his residency in surgery and urology. Dr. Kanealy was a member of Mercy Hospital medical staff, member and past president of St. Luke's Hospital medical staff and member and past president of the Iowa Urological Society.

Dr. Philip I. Crew, 80, Marion, died November 26 at St. Luke's Hospital. Dr. Crew received the M.D. degree and completed his residency in obstetrics and gynecology at the U. of I. College of Medicine. He was a former president of the Linn County Medical Society; fellow of the American College of Surgery and American College of Obstetrics and Gynecology and former president of St. Luke's and Mercy Hospital medical staffs. From 1975 to 1981, Dr. Crew was a member of the teaching staff at the Cedar Rapids Family Practice Residency Program.

Dr. Eugene F. Ritter, 71, Centerville, died December 24 at St. Joseph Mercy Hospital in Centerville. Dr. Ritter received the M.D. degree at the U. of I. College of Medicine and interned at Milwaukee General Hospital in Milwaukee, Wisconsin. He was a member of American Academy of Family Physicians and life member of the U. of I. Alumni Association. Dr. Ritter began medical practice in Centerville in 1946.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Fee Restrictions: The Golden Rule

IT IS AN argument often heard from those who oppose placing restrictions on contingency fees for plaintiffs' attorneys: *Why should there be limits on lawyers' fees? No one tells doctors what to charge!*

It is an argument that is "100% in the wrong direction," according to an executive for one of Iowa's principal third party payors. Significantly, he is not alone in predicting this argument will become increasingly invalid in the future.

In earlier times there were no third parties involved in providing remuneration for medical care. Fees and methods of payment were matters strictly between the physician and the patient. Those days "will never be seen again," says an Iowa physician whose career is tied totally to the financial aspects of medical care delivery.

Today, a host of entities directly or indirectly set boundaries on what Iowa physicians can charge for their services. The laundry list of third party payors includes PPO's, HMO's, service corporations, commercial insurance companies, Medicaid and Medicare. Each of these entities has a unique methodology to determine physician payment for medical care.

"On the surface, the only true restriction on charging is with Medicare and Medicaid. However, physicians are facing competition which is playing an increasing role in limiting fees," explains the third party payor executive. "The third party payors have the patients. More and more, physicians are finding themselves in the position of bargaining for their fees and their patients."

According to the physician interviewed, physician fee restrictions are an example of the Golden Rule.

"It's simple. The guy who has the gold makes the rules. Physicians have no choice but to listen to the ones who pay the bills."

Though he says there is more "fee accountability" than there once was, this physician is also critical of the current third party payment system.

"Physicians haven't been picked on nearly as much as hospitals, but medical reimbursement has always been baffling and arbitrary. There's just too much subjectivity involved."

His personal antidote: More objectivity through a "relative value scale" similar to DRG's.

"We in medicine could figure out the relative value of everything that's done in medicine," he believes.

Imperfections aside, those interviewed are convinced third party payment systems and resulting fee restrictions are here to stay. Physicians can work toward making the system more equitable but will probably see third party payors become an increasingly significant factor in medical care delivery.

"More large groups are getting into the practice of medicine. Big employers are shopping around for the best deal on health insurance. Big groups have a lot of clout," concludes the physician.

"By the year 2000, I believe there will be 4 principal third party payors. With this will come more control by those payors. The fewer there are, the stronger their bargaining position," predicts the third party payor executive.

Physicians may find it "more and more difficult to maintain fee schedules that keep up with inflation," he adds.

"Negotiating for business is becoming a fact of life for physicians."

February 1986

Iowa Medicine

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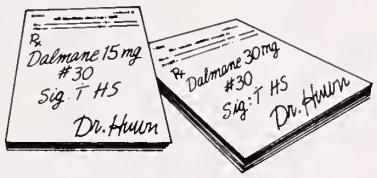
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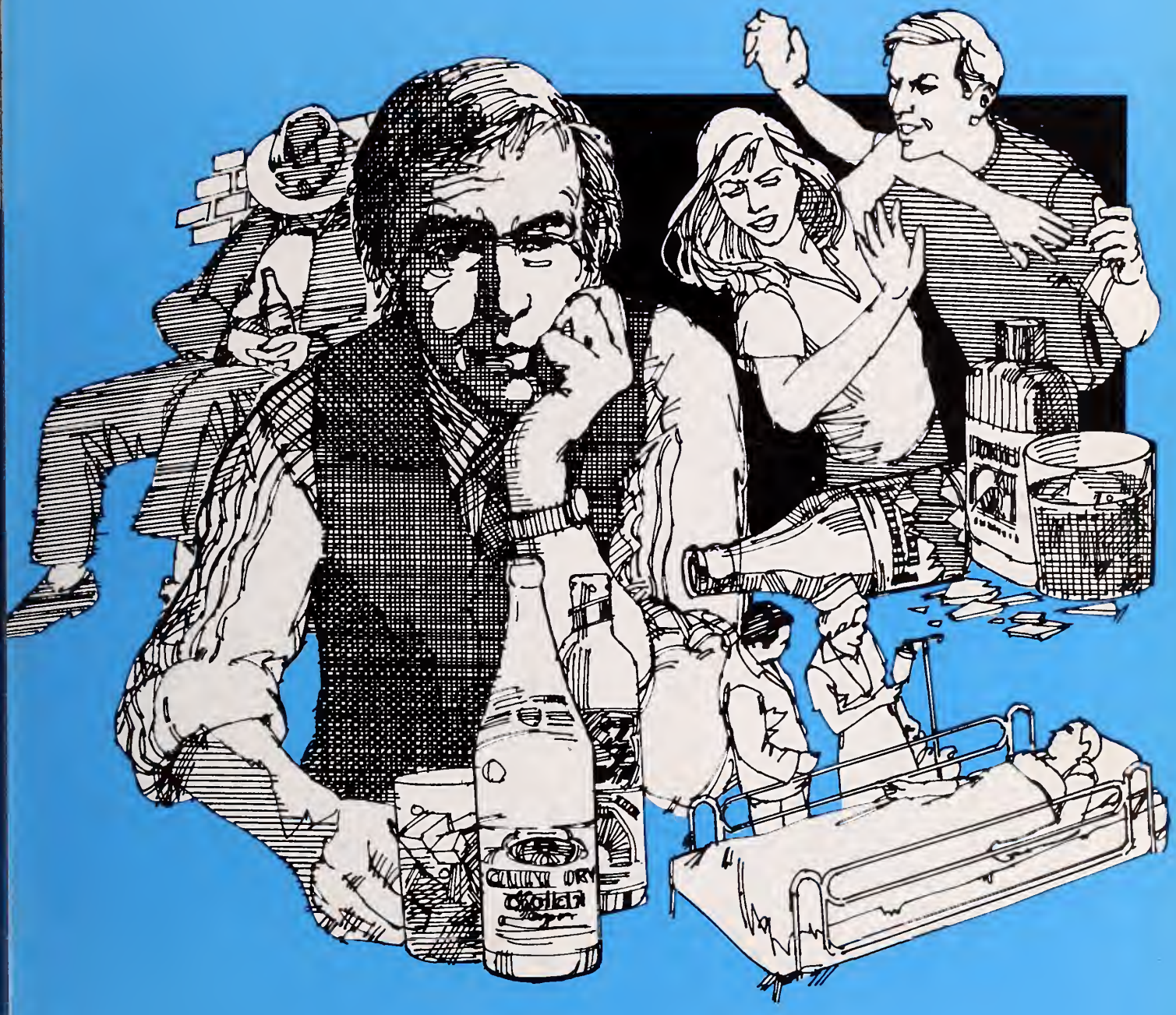
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IowaMedicine

March 1986

Journal of the Iowa Medical Society



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March 1986

IowaMedicine

Volume 76 Number 3

Journal of the Iowa Medical Society

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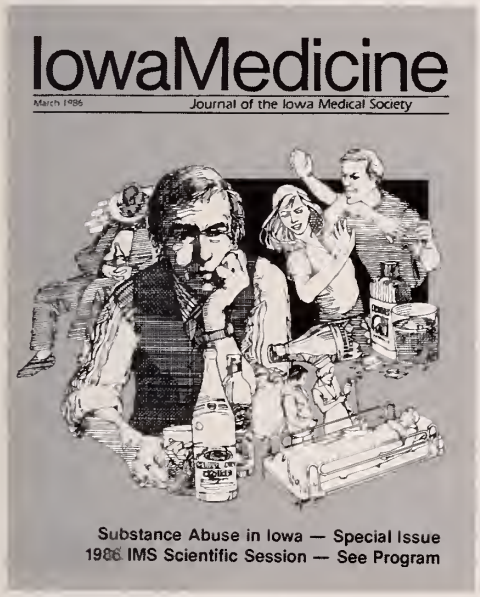
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ABOUT THE COVER



Substance Abuse in Iowa — Special Issue
1986 IMS Scientific Session — See Program

ABOUT THE COVER — A persistent and agonizing problem of our time is that of chemical and substance abuse. Our March issue of IOWA MEDICINE is devoted to this topic. The several authors give their perspectives on identification/treatment and provide special insights for Iowa physicians. Acknowledgement is made to the Iowa Medical Society Committee on Alcoholism and Drug Abuse for its efforts in planning and securing the editorial material for this issue.

IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-8709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: $15 per year. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

NATIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 South Blvd., Oak Park, Ill. 60302. Phone 312/383-8800

IOWA ADVERTISING: Contact Mrs. Polly Lynch, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265. Phone 515/223-1401

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UPDATE ON RENAL DISEASE

APRIL 23, 1986

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PRESIDENT'S PRIVILEGE



IN MEDICINE, as importantly as with any other profession or occupation, it is essential that physicians keep in touch with what is happening! But keeping in touch with all that's going on is a tall order.

Obviously, your professional organization should (and does) exist to facilitate your learning efforts. This March issue of IOWA MEDICINE is part of our ongoing bid to inform and educate you as a member physician. This issue focuses particular attention on two matters of consequence.

First, I call your attention to the 1986 Iowa Medical Society Scientific Session as described in the accompanying program insert. Our annual medical education program gives those physicians who attend a concise and critical insight on subjects of current importance. This year we are focusing on (1) care of the elderly and (2) risk management — two timely topics for all of us who practice in Iowa. Our 1986 IMS Scientific Session will coincide with the House of Delegates. It will be April 18-20 at the Marriott Hotel in Des Moines.

Additionally, and educationally, we are offering this special issue on chemical and substance abuse. We have developed it with impetus from the IMS Committee on Alcoholism and Drug Abuse. Several members of the committee are authors of articles.

The sad tale of chemical and substance abuse is told repeatedly by the media. It is a problem of fearful consequence to all concerned Iowans. Regardless of your medical or surgical specialty, you need to be informed, and you need to be willing to confront the situation when a patient raises your suspicion.

I make two requests: (a) read this issue for a current Iowa perspective on substance abuse, and (b) examine the IMS Scientific Session Program with a view toward attending.

The public looks to us for competent and compassionate service. We can deliver such only if we are optimally informed. Take advantage of the learning opportunities provided by your professional organization — *the Iowa Medical Society*.

Emmett B. Mathiasen M.D.

Emmett B. Mathiasen, M.D.
President

Questions and Answers — An Interview With John Tapscott
Executive Director,
National Council on Alcoholism and
Other Drug Dependencies

Adolescent Chemical Dependency Programs: Meeting The Need?

John Tapscott is executive director of the National Council on Alcoholism and Other Drug Dependencies (NCA) headquartered in Des Moines. He comments here on the adequacy of treatment programs for adolescent chemical abusers and the appropriateness of screening and admissions criteria.

What questions are being raised about adolescent chemical dependency treatment?

A CBS News investigation aired recently charged many troubled youngsters are "put away for treatment they don't need." Also, a recent article in the U.S. JOURNAL OF ALCOHOL AND DRUG DEPENDENCE raises questions about the adequacy and appropriateness of adolescent chemical dependency treatment.

Only in the past 5 or 6 years have we begun to develop effective strategies for intervention with adolescents. Part of the problem is adolescent inpatient treatment has become big business.

Aren't these programs meeting a need?

We constantly hear that another inpatient adolescent program is using a new method or approach. We're told if we don't act immediately we will lose a generation of young people. Inpatient treatment is not the only modality appropriate in treating adolescent chemical dependency. We need to focus on expanding available treatment options. Like other diseases, the most intensive treatment is not always needed. We also need long-term aftercare programs, halfway houses, support groups, etc.

Are you saying promoting the need for treatment is not the right approach?

I am saying we need better research in adolescent chemical dependency and a more scientific investigation of inpatient and outpatient treatment modalities. We don't need a mass fear approach. Media advertising focusing on the need for treatment can cause some people to overreact.

Isn't adequate research data available from adult chemical dependency treatment programs?

Most adult alcoholism treatment facilities are less than 2 decades old. They are just beginning the process of identifying relevant components of their programs. Also, adult issues and needs are different than those of adolescents. Treatment experiences in adult programs are not always applicable.

Where should we focus our efforts?

On the specific needs of adolescents and the best types of treatment to meet those needs. Chemical dependency professionals must as-

sure youngsters are adequately evaluated. The treatment provided should be helpful and worth the price. A standard evaluation procedure needs to be developed. Otherwise, we can only guess at the value of any new programs. Several vital components are essential in any program — staffing and structure, family involvement, reinforcement and positive growth and adolescent development, etc.

More research and experience are needed to determine the treatment approaches indicated for different types of chemical abuse/dependency. To match the need to the type of treatment, an objective evaluation process is vitally important.

What other suggestions do you have for improvement?

Differential diagnosis is crucial and can best be done in evaluation settings not connected with a particular treatment program. We must differentiate between adolescents who have emotional or behavior disorders and those who are chemically addicted.

Isn't that difficult?

Yes, especially in cases where emotional/behavioral disorders are associated with episodic abuse of alcohol and other drugs. However, if the evaluation is not directly tied to a specific program, there is greater assurance a referral is based on the child's needs.

The CBS news story said there are "massive amounts" of misdiagnosis and treatment in adolescent treatment programs. Is this true?

I think massive may be a bit strong. However, in the JOURNAL article referred to earlier, Richard Weedman, consultant for the National Association of Alcoholism Treatment Programs (NAATP), said this happens "far more than people in the field want to admit."

How often are adolescents misdiagnosed and inappropriately treated?

There are mixed opinions among experts about what is happening in adolescent treatment. Weedman believes kids are being inappropriately placed in inpatient programs. He reports some adolescents are put in locked wards for 10 to 15 days while diagnoses are made. According to Weedman, this deprives the child of his/her rights. He also stresses not all of our programs operate this way.



John Tapscott

Are there any statistics to substantiate these charges?

Blue Cross/Blue Shield of Minnesota has released figures which show 12% of chemical dependent patient days, including adolescent treatment, are ineligible for reimbursement.

What is the Des Moines National Council on Alcoholism and Other Drug Dependencies (NCA) doing in the areas of appropriate screening and adequate treatment?

The Des Moines NCA provides comprehensive evaluation and referral by chemical dependency and mental health professionals. By identifying an individual's needs, we can offer referrals to appropriate services, matching the needs to the services available. We are licensed by the Iowa Department of Substance Abuse and follow Joint Commission on Accreditation of Hospital standards.

The Des Moines NCA also provides an extensive prevention program. It begins with children as young as age 3 and includes information, education, intervention, alterna-

(Please turn to page 137)

Substance Abuse Problems in Iowa: Coordinating Our Efforts

MARY ELLIS
Des Moines, Iowa

Just how widespread is Iowa's alcohol and drug abuse problem? This article provides relevant statistics from the Iowa Department of Substance Abuse. It also explores current Iowa efforts to deal with chemical abuse; recommendations are cited for future programs.

USE OF CHEMICAL substances (particularly alcohol) is an issue clouded by inconsistent policy and lack of common consensus.

Tougher drunk driving laws are enacted while government spending for substance abuse treatment is cut. The suggestion of decreasing accessibility to alcohol is decried while prevention measures are advocated. Some support treatment for all drunk driving offenders while others would put them in jail. Alcohol and tobacco advertising is permitted by those promoting healthy lifestyles. Adequate substance abuse histories are only rarely taken by health and welfare care providers.

It is often difficult to convince decision-makers that the substance abuse problem has reached Iowa. Yet, Iowa has come a long way in establishing a sound approach to this difficult problem. The extent of the problem, the current response and recommendations for the future are presented here.

Mary Ellis is director of the Iowa State Department of Substance Abuse.

Substance Use/Abuse in Iowa

National statistics place Iowa last in consumption of liquor and wine (based on actual sales) to other states. However, Iowa beer sales rank 25th among the 50 states. Based on total population, every Iowan consumed 23.9 gallons of beer last year. Iowa ranks eighth in the nation in the number of establishments per capita holding liquor licenses. For every 1000 people, the state issues 1.56 retail liquor licenses. Drunk driving data continues as a strong indicator that a substance abuse problem exists. Almost half of all fatal traffic accidents in Iowa are alcohol-related.

Although the potential for abuse of other drugs exists here, alcohol abuse is our greatest problem. Data on clients served by Iowa Department of Substance Abuse (IDSA) funds show over 80% list alcohol as the primary problem. Many also use other drugs. Marijuana is the second place drug of choice. Cocaine, amphetamines and heroin are a distant third, fourth and fifth.

Juvenile substance abuse is a significant problem. A 1984 survey of 15,643 Iowa students indicates 40% of twelfth graders drink alcohol at least monthly. 15% use other drugs. Unfortunately, 14% of these twelfth graders who drink do so at least several times a week and are at high risk for chemical dependence. 27% of all twelfth graders said they had driven a car once or twice in the past month after consuming alcohol or drugs. 15% had driven 3 to 6 times.

It is estimated over 60% of the population

(Please turn to page 103)

STATE-FUNDED SUBSTANCE ABUSE TREATMENT SERVICES BY COUNTY

COUNTY	OFFICE LOCATION	PROGRAM NAME
Adair	Greenfield	Alc. & Drug Assistance Agency
Adams	Corning	Action Now Chemical Dep. Treatment Services
Allamakee	Waukon	Alcohol and Related Problems Service Center
	Postville	Alcohol and Related Problems Service Center
Appanoose	Centerville	Southern Iowa Economic Dev. Assn.
Audubon	Audubon	Area XII Alc. & Drug Treatment Unit
Benton	Vinton	Area Substance Abuse Council
Black Hawk	Waterloo	Northeast Council on Substance Abuse
Boone	Boone	Regional Substance Abuse Center
Boone — juvenile	Boone	Youth and Shelter Services
Bremer	Waverly	Northeast Council on Substance Abuse
Buchanan	Waterloo	Northeast Council on Substance Abuse
Buena Vista	Storm Lake	Northwest Iowa Alc. and Drug Treatment Unit
Butler	Waverly	Northeast Council on Substance Abuse
Calhoun	Rockwell City	North Central Alcoholism Research Foundation
Carroll	Carroll	Area XII Alc. & Drug Treatment Unit
Cass	Atlantic	Alc. & Drug Assistance Agency
Cedar	Iowa City	Mid-Eastern Council on Chemical Abuse
Cerro Gordo	Mason City	Chemical Dependency Services of North Iowa
Cherokee	Cherokee	Siouxland Council on Alcoholism and Drug Abuse
Chickasaw	New Hamptom	Northeast Council on Substance Abuse
Clarke	Osceola	Alc. & Drug Assistance Agency
Clay	Spencer	Northwest Iowa Alc. and Drug Treatment Unit
Clayton	Elkader	Alcohol and Related Problems Service Center
Clinton	Clinton	New Directions
Crawford	Denison	Midwest Iowa Alcohol and Drug Abuse Center
Dallas	Adel	Alc. & Drug Assistance Agency
	Perry	Alc. & Drug Assistance Agency
Davis	Bloomfield	Southern Iowa Economic Dev. Assn.
Decatur	Creston	Action Now Chemical Dep. Treatment Services
Delaware	Manchester	Substance Abuse Service Center
Des Moines	Burlington	Alcohol and Drug Dependency Services
Dickinson	Spirit Lake	Northwest Iowa Alc. and Drug Treatment Unit
Dubuque	Dubuque	Substance Abuse Service Center
Emmet	Estherville	Northwest Iowa Alc. and Drug Treatment Unit
Fayette	Oelwein	Alcohol and Related Problems Service Center
Floyd	Charles City	Chemical Dependency Services of North Iowa
Franklin	Mason City	Chemical Dependency Services of North Iowa
Fremont	Sidney	Alc. & Drug Assistance Agency
Greene	Jefferson	Area XII Alc. & Drug Treatment Unit
Grundy	Waterloo	Northeast Council on Substance Abuse
Guthrie	Guthrie Center	Area XII Alc. & Drug Treatment Unit
Hamilton	Webster City	North Central Alcoholism Research Foundation
Hancock	Mason City	Chemical Dependency Services of North Iowa
Hardin	Iowa Falls	Substance Abuse Treatment Unit of Central Iowa
Harrison	Logan	Alc. & Drug Assistance Agency
Henry	Mt. Pleasant	Alcohol and Drug Dependency Services
Howard	Cresco	Alcohol and Related Problems Service Center
Humboldt	Humboldt	North Central Alcoholism Research Foundation
Ida	Ida Grove	Siouxland Council on Alcoholism and Drug Abuse
Iowa	Marengo	Mid-Eastern Council on Chemical Abuse
Jackson	Maquoketa	Area Substance Abuse Council
Jasper	Newton	Central Iowa Foundation for Alcoholism and Drug Abuse
Jefferson	Fairfield	Southern Iowa Economic Dev. Assn.

STATE-FUNDED SUBSTANCE ABUSE TREATMENT SERVICES BY COUNTY

COUNTY	OFFICE LOCATION	PROGRAM NAME
Johnson	Iowa City	Mid-Eastern Council on Chemical Abuse
Jones	Anamosa	Area Substance Abuse Council
	Monticello	Area Substance Abuse Council
Keokuk	Sigourney	Southern Iowa Economic Dev. Assn.
Kossuth	Algona	Chemical Dependency Services of North Iowa
Lee	Ft. Madison	Alcohol and Drug Dependency Services
	Keokuk	Alcohol and Drug Dependency Services
Linn	Cedar Rapids	Area Substance Abuse Council
Louisa	Wapello	Alcohol and Drug Dependency Services
	Columbus Junction	Alcohol and Drug Dependency Services
Lucas	Chariton	Southern Iowa Economic Dev. Assn.
Lyon	Rock Rapids	Northwest Iowa Alc. and Drug Treatment Unit
Madison	Winterset	Action Now Chemical Dep. Treatment Services
Mahaska	Oskaloosa	Southern Iowa Economic Dev. Assn.
Marion	Newton	Central Iowa Foundation for Alcoholism and Drug Abuse
Marshall	Marshalltown	Substance Abuse Treatment Unit of Central Iowa
Mills	Glenwood	Family Service
Mitchell	Osage	Chemical Dependency Services of North Iowa
Monona	Onawa	Midwest Iowa Alcohol and Drug Abuse Center
Monroe	Albia	Southern Iowa Economic Dev. Assn.
Montgomery	Red Oak	Alc. & Drug Assistance Agency
Muscatine	Muscatine	New Horizons, Muscatine General Hospital
O'Brien	Sheldon	Northwest Iowa Alc. and Drug Treatment Unit
Osceola	Spirit Lake	Northwest Iowa Alc. and Drug Treatment Unit
Page	Clarinda	Alc. & Drug Assistance Agency
Palo Alto	Spencer	Northwest Iowa Alc. and Drug Treatment Unit
Plymouth	Le Mars	Siouxland Council on Alcoholism and Drug Abuse
Pocahontas	Pocahontas	North Central Alcoholism Research Foundation
Polk	Des Moines	National Council on Alcoholism — Central Assessment Center
Polk	Des Moines	Intersectional United Advanced Planning
Pottawattamie	Council Bluffs	Family Service
Poweshiek	Grinnell	Substance Abuse Treatment Unit of Central Iowa
Ringgold	Creston	Action Now Chemical Dep. Treatment Services
Sac	Sac City	Area XII Alc. & Drug Treatment Unit
Scott	Davenport	Center for Alcohol and Drug Services
Shelby	Harlan	Midwest Iowa Alcohol and Drug Abuse Center
Sioux	Sioux Center	Alcoholism and Drug Abuse Center for Sioux County
	Hawarden	Alcoholism and Drug Abuse Center for Sioux County
Story	Ames	Regional Substance Abuse Center
	Nevada	Regional Substance Abuse Center
Story — juvenile	Ames	Youth and Shelter Services
	Nevada	Youth and Shelter Services
Tama	Toledo	Substance Abuse Treatment Unit of Central Iowa
Taylor	Corning	Action Now Chemical Dep. Treatment Services
Union	Creston	Action Now Chemical Dep. Treatment Services
Van Buren	Keosauqua	Southern Iowa Economic Dev. Assn.
Wapello	Ottumwa	Southern Iowa Economic Dev. Assn.
Warren	Des Moines	Intersectional United Advanced Planning
	Des Moines	National Council on Alcoholism
Washington	Iowa City	Mid-Eastern Council on Chemical Abuse
Wayne	Corydon	Southern Iowa Economic Dev. Assn.
Webster	Ft. Dodge	North Central Alcoholism Research Foundation
Winnebago	Mason City	Chemical Dependency Services of North Iowa
Winneshiek	Decorah	Alcohol and Related Problems Service Center
Woodbury	Sioux City	Siouxland Council on Alcoholism and Drug Abuse
Worth	Mason City	Chemical Dependency Services of North Iowa
Wright	Eagle Grove	North Central Alcoholism Research Foundation

at the Eldora State Training School and the Iowa Juvenile Home in Toledo abuse these substances regularly. Presently, no formalized substance abuse treatment is offered at either facility.

The criminal justice system (probation, parole, OWI offender) remains the greatest source of referrals to IDSA-funded programs (37% of all admissions). In addition, 61% of the 1984 inmates in the state correctional facilities had an admission history of substance abuse; 84% of those paroled were known substance abusers. IDSA is providing technical assistance to the Department of Corrections in developing substance abuse programming.

Responding To Treatment Needs

There are more than 100 substance abuse treatment centers (outpatient, inpatient, or residential) in Iowa. They are located in hospitals and private facilities, as well as residential and outpatient agencies under contract to IDSA. Last year over 30,000 persons were referred to substance abuse facilities in Iowa and over 12,000 were admitted for treatment.

Most substance abusers can be adequately served through outpatient treatment. Inpatient/residential treatment is also provided by 546 hospital or private beds, 218 IDSA-funded beds and 160 beds at the state mental health institutes. In addition, there are 96 halfway house beds (public and private) in Iowa.

Yet there are many unmet substance abuse problems. Annual assessment surveys of the IDSA consistently show a lack of juvenile treatment services in the public sector (including outpatient services) and a shortage of halfway house beds. Increased enforcement of drunk driving laws has brought about increased demand for assessment and treatment. Many publicly-funded treatment centers now have waiting periods of a month or longer.

Prevention Efforts

IDSA funds help schools and communities throughout Iowa develop effective prevention

(Please turn to page 104)

PREVENTION PROGRAMS FUNDED BY THE IOWA DEPARTMENT OF SUBSTANCE ABUSE

Ames	Youth and Shelter Services, Inc.
Boone	Boone County Prevention and Community Services
Burlington	Alcohol and Drug Dependency Services for Southeast Iowa
Carroll	Area XII Alcoholism and Drug Treatment Unit
Cedar Falls	Area Education Agency 7: Substance Abuse Prevention Education Project
Cedar Rapids	Area Substance Abuse Council
Clear Lake	Northern Trails Area Education Agency
Clinton	New Directions, Inc.
Council Bluffs	Loess Hills Area Education Agency: Substance Abuse Prevention/Life Skills
Creston	Green Valley Area Education Agency: Project SAVE
Davenport	Center for Alcohol and Drug Services
Decorah	Helping Services for Northeast Iowa, Inc.
Denison	Midwest Iowa Alcohol and Drug Abuse Center
Des Moines	National Council on Alcoholism
Elkader	Substance Abuse Services for Clayton County
Fort Dodge	North Central Alcoholism Research Foundation
Indianola	Prevention Concepts
Iowa City	Mid-Eastern Council on Chemical Abuse
	United Action for Youth, Inc.
Marshalltown	Substance Abuse Treatment Unit of Central Iowa
Muscatine	New Horizons
Newton	Jasper County Substance Abuse Prevention Program
Ottumwa	Southern Iowa Economic Development Association: Drug and Alcohol Services
	Southern Prairie Area Education Agency 15
Sioux City	Siouxland Council on Alcoholism and Drug Abuse
Spirit Lake	Northwest Iowa Alcohol and Drug Treatment Unit
Waterloo	Northeast Council on Substance Abuse

Iowa Substance Abuse Information Center — located at the Cedar Rapids Library

HOSPITAL AND/OR PRIVATE SUBSTANCE ABUSE TREATMENT SERVICES

LOCATION	PROGRAM
Burlington	Burlington Medical Center
Cedar Rapids	Mercy Hospital
Cherokee	Cherokee Mental Health Institute
Clarinda	Clarinda Mental Health Institute
Council Bluffs	Mercy Hospital
Davenport	Mercy Hospital
Des Moines	Mercy Alcohol and Drug Recovery Program, Mercy Hospital
	Our Primary Purpose, Lutheran Hospital
	Our Primary Purpose, Mercy Hospital
	Powell III, Iowa Methodist Medical Center
	Veterans Administration Medical Center
	Women's Recovery Unit, Des Moines General Hospital
Dubuque	Mercy Medical Center
	The Turning Point Treatment Center
Dyersville	Adolescent Unit, Mercy Health Center
Eldora	Eldora Hospital
Estherville	Holy Family Hospital
Forest City	Forest City Hospital
Fort Dodge	Trinity Recovery Center
Fort Madison	Fort Madison Community Hospital
Iowa City	(see Oakdale)
	Veterans Administration Medical Center
Independence	Independence Mental Health Institute
Knoxville	Veterans Administration Medical Center
Manning	Manning General Hospital
Monticello	John McDonald Hospital
Mount Ayr	Ringgold County Hospital
Mount Pleasant	Mount Pleasant Mental Health Institute
Oakdale	University of Iowa Chemical Dependency Center
Ottumwa	St. Joseph Hospital
Sioux City	Gordon Chemical Dependency Center
	Marian Health Center
Waterloo	Schoitz Medical Center

strategies. Prevention program approaches include information, education, early intervention and alternative non-drug activities. The Department also funds the Iowa Substance Abuse Information Center, a statewide service at the Cedar Rapids library. The Center has literature, films, tapes and other materials available at little or no charge to all Iowans. IDSA spends approximately $1.3 million a year on statewide prevention efforts.

A parent-community volunteer group effort is a national response to substance abuse. Iowa has been a national leader in this effort and has 247 separate groups with several thousand active members. A state association, the Iowa Network for Drug Information (INDI), has been formed and works closely with IDSA and local substance abuse programs.

Recommendations for the Future

Much has been accomplished in dealing with substance abuse issues in recent years. Public awareness of substance abuse has led to a public outcry for government and private organizations to support positive activity.

State funding for assessment and treatment services has not paralleled the enhanced activity in enforcement of drunk driving laws. The resultant backlog of OWI offenders has clogged the criminal justice/substance abuse system. In many cases, OWI offenders receive no professional assessment. Education and improved understanding among public officials could help this situation.

The medical community needs to take a greater interest in identifying the needs of the substance abuser. Assessment and diagnosis prior to the advent of overt physical symptoms are an essential part of early intervention.

Cooperation among entities working on substance abuse issues has improved, but greater efforts must be made to coordinate private and public programs. In difficult economic times, no organization can afford to operate within a vacuum. That approach is not beneficial to recipients of services. It is time to pledge commitment to a more coordinated response and greater consensus on common concerns.

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Substance Abuse: A Growing Problem for Adolescents

DONALD E. GREYDANUS, M.D.
Des Moines, Iowa

Abuse of alcohol, cigarettes, marijuana and cocaine is an increasingly serious problem for American youth. In this article, Donald E. Greydanus, M.D., reviews current statistics concerning adolescent substance abuse and discusses signs and symptoms physicians should watch for.

THOUGH THERE are many abused drugs, alcohol, tobacco, marijuana and cocaine will be the focus of this article. For American adolescents, a serious problem exists with these 4 substances. Of 16,000 high school students surveyed recently by the University of Michigan, 30% reported drug abuse of some sort within the previous 30 days.[1]

Alcohol

Numerous national surveys describe widespread alcohol use by adolescents. Johnson *et al* report in a survey of 17,000 high school seniors that 75% have tried alcohol and 5% use it daily.[2] In 1982, the National Institute of Drug Abuse (NIDA) noted 93% of high school seniors had tried alcohol, 87% during the past year and 70% during the past month. 5.7% were daily users of alcohol.[1,3] Zucker and Harford identified 30% of males and 22% of females as drinking some alcohol by age 13.[4] By age 18, 93% of males and 73% of females drink.[4]

The pattern of alcohol consumption begins early. Forster's study of upper middle class adolescents showed 73% of fifth to sixth graders had tried wine and 23% had tried other types of alcohol.[5] In this same group, 27% had tried cigarettes and 4% had tried marijuana.

Recent studies show a connection between early use of alcohol and/or cigarettes and later use of marijuana and other drugs. The alcoholism problem among parents of teenagers worsens this situation. The NIDA estimates 15 million children (1 of every 5 in the physician's office) live with an alcoholic parent.

Cigarettes

In addition to causing health problems later in life, cigarette use by adolescents can lead to use of other drugs. Forster's study notes 27% of fifth and sixth graders and 55% of seventh and eighth graders have tried cigarettes.[5] The NIDA study of high school seniors indicates 70% have tried cigarettes, 30% during the pre-

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THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF MARCH 1986

vious month. 21% used cigarettes on a daily basis in 1982.[3] Johnson *et al* note 12% of American high school seniors use tobacco on a daily basis.[2] In 1981 Holleb reported 11% of boys and 13% of girls 12-18 years old smoked 10 or more cigarettes per day.[11]

Marijuana

Introduced in the United States in the 1930's, marijuana was rarely used here prior to 1960. Before 1962, only 1% of 12-17 year-olds and 4% of 18-25 year-olds had tried marijuana.[12] In 1979, 60% of high school seniors had tried marijuana and 11% used it daily.

It is not unusual for such drug use to start early and progress rapidly. Forster notes 4% of fifth and sixth graders, 19% of seventh and eighth graders and 58% of high school seniors had tried marijuana.[5] Overall drug use among eighth graders has risen dramatically from 8% in 1971 to 20% in 1978.[2]

Symptoms: Adolescent Drug Abuse

- **Reduced attention span**
- **Poor short memory skills**
- **Limited fine motor control**
- **Poor oral hygiene**
- **Injected conjunctiva**
- **Nasal irritation or discharge**
- **Abdominal pain**
- **Weight loss**
- **Emesis**
- **Melena**
- **Hepatomegaly**
- **Multiple skin bruises**
- **Chronic cough and recurrent bronchitis**
- **Tachycardia**
- **Poor muscle tone**
- **Sexually transmitted diseases**

In 1982, NIDA noted 6.3% of high school seniors were daily marijuana users. Marijuana use is still unusual before age 10 but increases sharply during adolescence. In 1982 it was estimated 54 million Americans had tried marijuana. 20% were described as active users (at least once in 30 days before the survey.)[12]

What happens to teenagers who use marijuana? A study of high school seniors who used marijuana daily noted 50% were still daily users 5 years later.[2] Kandel[7] recently evaluated 1,325 young adults ages 24 and 25 and found 15% used marijuana at least 4 times per week.[7] 23% used it at least once a month. These individuals had greater psychiatric instability, more deviant behavior, greater use of other drugs and more depression than young adults not using marijuana. The social and psychological dysfunction classically described for adolescents using marijuana is also true for adults.[7]

The teenager or young adult using marijuana is more likely to be a polydrug user. Marijuana serves as the stimulus for further drug use including cocaine, amphetamines and hallucinogens. Except in rare cases, cigarette, alcohol or marijuana use starts by age 20 or 21.[6, 12] Parental acceptance and use of marijuana lead to polydrug use and abuse of other drugs in their adolescent offspring.[14]

Cocaine

Cocaine is no longer a drug just for the wealthy. In 1975 9% of teenagers had tried cocaine. By 1983, this had risen to 17%. The NIDA estimates 1% of youth are daily cocaine users.[2] In the NIDA survey, 88% of high school seniors said marijuana is easy to obtain. 47% said cocaine is easily obtained. In 1975 1.9% of high school seniors used cocaine during the month prior to the survey; in 1982, 5% did.[3] A clear trend is emerging.

Signs and Symptoms

In a recent review, Jones outlined the symptomatology of adolescent drug and alcohol abuse.[16] Risk factors include positive family history for drug use (parents, grandparents and other relatives), family discord (divorce, separation, poor parenting skills) and family history of total drug abstinence.[16] Other risk

Warning Signs: Adolescent Drug Abuse

- **Depression**
- **Reduced school performance**
- **Reduced hygiene**
- **Increased parent-child conflict**
- **Unexplained negative behavior**
- **Reduced communication skills**
- **Friends who use drugs**
- **Conduct disorder activity**
- **Runaway behavior**
- **Overt drug intoxication**
- **Difficulties with police**

factors are adolescent depression or low self-esteem due to neurobehavioral disorders, widespread availability of drugs and drug-abusing peers.

Signs of drug abuse in adolescents include depression, reduced school performance (dropping 2 or more grade levels below known abilities, overt academic failure or truancy), reduced hygiene, increased parent-child conflict, unexplained negative behavior, worsening communication skills, drug using peers, conduct disorder activity, runaway behavior, overt drug intoxication and difficulties with police.

Symptoms include reduced attention span, poor short memory skills, limited fine motor control, poor oral hygiene, injected conjunctiva, evidence of nasal irritation and/or discharge, episodes of abdominal pain including epigastric tenderness, weight loss, emesis, melena, hepatomegaly, multiple skin bruises (needle "tracks" are uncommon in adolescents), chronic cough and recurrent bronchitis, tachycardia, poor muscle tone, various sexually transmitted diseases and others.[16, 17]

Drug abuse may mimic psychiatric disorders including major affective disorder (bipolar disorder or major depression), anxiety disorder, personality disorder, schizophrenia, severe adjustment disorders and others.[18] General laboratory screens are usually unrewarding. Adolescents with alcohol abuse may have anemia, macrocytosis and elevated liver enzymes, especially gamma-glutamyl transpeptidase. A serum or urine drug screen may be positive. The value of these tests varies according to the drug screen being used, whether thin layer chromatography, enzyme immunoassay, radioimmunoassay, gas chromatography or mass spectroscopy.[18]

MacDonald has introduced a widely used scale measuring the 5 stages of drug use in adolescents: *Stage 0 — non-use; I — experimental use; II — recreational, social use; III — interference with school performance and developmental tasks; IV — compulsive use or addiction.*[20, 21] Without recognition and intervention, the progression from stage I to stage IV can occur in a matter of months.[15]

Recovery

A vital component to helping adolescents recover from their drug dilemma is prevention — helping children become knowledgeable about the effects of "drug pollution." As early as the first grade, children develop long-term attitudes regarding drugs.

There are many reasons for adolescent drug use; easy access, influence of television and other media, societal chaos, reflections of adult lifestyles and others.[17] Some teenagers use drugs as a way of dealing with negative childhood and adolescent experiences or feelings. Others believe drugs allow them to pass more quickly from childhood to adolescence or from adolescence to adulthood. Plans for dealing with adolescent drug and alcohol abuse should be developed with these concepts in mind. Current research views drug abuse and alcoholism as biological disorders which require behavioral controls. An important part of helping the recovering drug abuser is to "protect" him/her from drug abusing peers.

If drug experimentation can be delayed to adulthood, the risk for drug abuse is greatly reduced.[12, 16] Youth need to be educated that cigarettes and alcohol are "gateway" drugs which can lead to other drug abuse.[12] Promotion of healthy lifestyles and successful alternatives to drug use should be taught from childhood.[22] The link between drug abuse, depression and suicide in adolescents should be clearly understood.[23, 24]

(Please turn to page 110)

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Family Involvement

Finally, the involvement of the family in identification and care of the adolescent polydrug user should be emphasized. Childhood and adolescent depression often emerge where families have major parenting dysfunction. Such conditions can lead to a lifetime of drug abuse.

Recent studies have focused on families in which a parent is an alcoholic. Teenagers in these families should be taught they did not cause their parent's alcoholism and are not responsible for its control or cure.

Parents often react negatively to their adolescent's drug abuse, as reviewed by Schwartz.[13] Self-help parent groups have been found to be quite helpful.[26] Clinicians should become knowledgeable regarding the family's role in the enigma of adolescent drug and alcohol use. Physicians and society cannot afford to ignore this worsening problem.

References

References noted in this article are available from the author or from the editors of IOWA MEDICINE.

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J-6138 January 1986

Substance Abuse Detection — Current Medical Perspectives

JOSEPH L. MONAHAN, M.D.
Clinton, Iowa

The vast majority of substance abusers do not fit our stereotyped image of the alcoholic or "addict." This article explores obstacles to diagnosing substance abuse and catalogues behavioral and physical symptoms.

ALCOHOLISM AND DRUG ABUSE are synonymous in how they affect a person's life. The use of any mood-altering chemical that adversely impacts someone's health, career and personal relationships can be an "ism."

For the sake of simplicity, we will use the term "alcoholic" in this discussion since alcohol is the most widely used and readily available addictive chemical.

There are 2 major obstacles for clinicians to overcome if we are to diagnose and treat the disease of alcoholism.

Both are attitudinal.

One is our failure to recognize alcoholism as a disease. Too many physicians think of an alcoholic as a skid-row bum, clutching a brown sack, lying in the gutter. In reality, only about 5% of alcoholics fit this picture.

The second major obstacle that makes it difficult for physicians to diagnose and treat alcoholism is our experience with mood altering chemicals.

One or both of these obstacles make us reluctant to diagnose alcoholism in our patients. We may not want to recognize our ignorance concerning addiction. We may consider it a moral issue or a symptom of a greater psychiatric problem. We may not want to confront our own problems with addictive chemicals.

In diagnosing alcoholism, there are 7 areas we must investigate with our patients. These symptoms may occur simultaneously or at different times during the progression of alcoholism.

Loss of control — Information about irresponsible, irrational or compulsive behavior due to substance abuse may have to be obtained from sources other than the patient. Spouses, family, employers or others may have to be enlisted. The patient's denial system makes it impossible for him to yield this information.

- *Does he make promises to himself to control or pace his drinking?*
- *Does he "need a few" to be sociable? Does he gulp drinks? Does he prefer to mix his own? Does he "stock up" for special events? Does he break promises to himself about drinking?*

Loss of control is frightening to any individual. He knows it is happening but cannot stop it.

Withdrawal — Initially, these symptoms may not arouse suspicion, but as alcoholism progresses they become more ominous. Withdrawal progresses through 4 stages.

- *Stage 1 — Tremors, sometimes called "jitters" (may be only micro-tremors at first), anxiety states,*

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sweats, early elevation of blood pressure or tachycardia.

- *Stage 2 — Hallucinations. Initially they are auditory, then visual and sensory. These can be a frightening experience, and the patient may feel he is becoming psychotic.*
- *Stage 3 — Convulsions. Initially they may be only facial spasms, passed off as nervous "twitches."*
- *Stage 4 — Delirium tremens (D.T.S.) A lethal complication. The mortality rate is significant, more serious than any coronary.*

Blackouts — Blackouts are a peculiar phenomenon characteristic to the alcoholic. During alcoholic amnesia, the patient appears to function normally but has no recollection of any activities. The alcoholic can perform intricate physical and mental functions during a blackout.

Changing abnormal tolerances — In the early years, the practicing alcoholic has an abnormally high tolerance for alcohol. He may be the one to drive the others home, or he may be the last to leave the party. He may brag about how much he can drink.

However, as the disease progresses, it takes less and less alcohol to get him drunk. He can tolerate less alcohol than normal drinkers. At this point, he probably quits bragging about how much he can drink.

Serious interference with health — This can include heart disease (alcoholic cardiomyopathy), hypertension, tachycardia, extrasystoles or auricular fibrillation. Alcoholics may suffer from liver disease including acute alcoholic hepatitis or cirrhosis.

The following hematologic values may be in disarray:

M.C.V.
PLATELETS
2-HOUR POSTPRANDIAL GLUCOSE
HYPOGLYCEMIA (IN EARLY MORNING)
CHOLESTEROL (MAY BE EQUIVOCAL UP OR DOWN)
BUN

The following may be mildly elevated:

URIC ACID	**ALKALINE PHOSPHATASE**
SGOT	
SGPT	**SERUM BILIRUBIN**
LDH	**SERUM AMYLASE**

Many physicians believe a blood alcohol of >150 mg percent in an apparently unintoxicated patient should raise suspicion. Unfortunately, we do not yet have a reliable laboratory test that will give us a diagnosis.

We must decide what disease most likely explains the symptoms and laboratory findings. Here are symptoms most frequently related to alcoholism:

- **Gastrointestinal —** Nausea, vomiting, gastritis, hematemesis, ulcer, esophagitis, heartburn, diarrhea, erratic eating habits may be gastrointestinal symptoms in the developing alcoholic.
- **Dermatological —** Dilated vessels, flushing, conjunctival rubra, periorbital edema, livid palms.
- **Neurological changes —** Headache, tremors, blackouts, insomnia, muddled thinking, peripheral neuropathy, hyperirritability, hyper-reactive reflexes, and just plain "nervous" may be presenting complaints.

Serious interference with psychological defenses and coping mechanisms — The patient might display:

ANGER	**DEFENSIVENESS**
RESENTMENT	**EVASIVENESS**
FRUSTRATION	**HOSTILITY**
FEAR	**WITHDRAWAL**
INTOLERANCE	**DEPRESSION**
APPREHENSION	**OVER-REACTION**

Psychosocial deterioration — Loss of jobs, OWI's, loss of peripheral family (in-laws, relatives, close friends) followed by loss of nuclear family (spouse, children, parents), abandoning hobbies and job or career failure.

In short, loss of everything the individual holds dear. At this point, he or she has only one good friend — the chemical.

There are several tools which can aid physicians in the diagnosis and treatment of alcoholic patients. One is the Chart of Alcohol Addiction and Recovery by E. M. Jellinek, M.D.[1] Another is the Georgia Doctor's Test for Adult Alcohol and Drug Use devised by G. Douglas Talbott, M.D., of the Ridgeview Institute, Smyrna, Georgia.

Both the chart and the questionnaire are available by contacting the editors of IOWA MEDICINE.

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Intervention Strategies

STANLEY M. HAUGLAND, M.D.
Des Moines, Iowa

The author discusses factors contributing to the denial syndrome and provides guidelines for successful physician intervention. He emphasizes an important step toward helping substance abusers is overcoming the patient's denial of the problem.

Webster: Intervene . . . to come between as an influencing force.

INTERVENTION IS SCARCELY A NEW CONCEPT for physicians. Every day, physicians intervene in disease processes, usually for patients who are seeking intervention willingly.

Chemical dependency/addiction is a different matter. The patients usually are not seeking help willingly because they do not think they have a problem. Denial and delusion are hallmarks of the illness. Patients believe they can fix it on their own.

Denial has its origins in the temperance movement. The concept of alcoholism as a disease, the disease of addiction, was first formulated in this country by Dr. Benjamin Rush in the late 18th century. Prior to that time, drunkenness was thought to be a condition sought by choice. It was not viewed as a problem needing a solution.

Dr. Rush believed some drank because they wanted to but others drank because they had to. He realized he could not solve the problem on his own and successfully prevailed upon the clergy for assistance. Thus, the temperance movement was born — a doctor-initiated movement — rather than a clergy-initiated movement.[1]

The clergy accepted the challenge and generally agreed alcoholism was a disease. They claimed, however, it was also a sin. Over the years the "disease" concept was largely dismissed or forgotten and the "sin" concept became predominant in our thinking.

Negative connotations from the sin-moral concept make it difficult to accept alcoholism as an illness. Alcoholism was and is not very respectable. Only in this century have we seen a major shift from the sin-judgment-punishment attitude to the disease-treatment-recovery approach.

The "loss of control" phenomenon is also difficult to accept. We all want to be free and feel we are in control of our lives. Addiction is a form of slavery and slavery is abhorrent.

The relationship between a human being and a mood-altering chemical is unique. This relationship is a very powerful one, often more powerful than any other relationship in the person's life. The victim's behavior is proof of this since some will continue to use a chemical at the expense of all else, even life itself. This strong relationship develops from the victim's wish to recapture the feeling from the chemical. It is a 100% reliable method of achieving euphoria, escape or peace of mind. Giving up such a dependable ally is very difficult.

Where, how and when does the physician

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intervene in such a disease? What resources are available to help physicians intervene?

Intervention Guidelines

It is important to avoid being judgmental. The victim has already judged himself or herself. If we judge them as "bad" people or convey a disapproving attitude, intervention attempts will be futile. Develop an approach that says, "You are a good person with a serious problem and I care about you." If you cannot intervene in a positive and caring fashion, it is wiser not to do it at all or to ask for help.

Avoid negative terms such as "alcoholic" or "addict." "Alcoholism" or "substance abuse" are more acceptable. Every patient needs to know the facts of his or her illness, but how the physician presents the facts is crucial.

"I believe, based on my evaluation, you are suffering from alcoholism." "Does this mean I'm an alcoholic, doctor?"

"I don't know that for sure. The term 'alcoholic' is a slang expression for someone addicted to alcohol, and I'm not sure if you are addicted. However, I do believe you are suffering from some alcoholism. Please remember alcoholism is defined as drinking that leads to trouble."

Have a course of action in mind that can be carried out the same day if possible. Physicians are very familiar with the phenomenon of a sick patient accepting help then changing their mind when they begin to feel better. Call a consultant or someone in Alcoholics Anonymous the day you see the patient. Have the names of 2 AA members available. If treatment is indicated, have the evaluation/treatment personnel establish a link with the patient/family before they become convinced they can manage by themselves.

If the laboratory can help, use it. Lab reports impress patients and family members and can be used to encourage them to seek further evaluation. (Incidentally, "evaluation" is a less threatening term to many patients.)

The patient's family will need help. If they consult you, advise them to attend a course or seek help from Al-Anon, a counselor or an information center. Encourage them to learn about the illness and to enlist as many family members as possible for strength and support.

If all else fails, consider recommending legal commitment. Research at Hazelden, Center City, Minnesota, has shown committed patients have as high or higher recovery rates as those who voluntarily enter treatment. It is important to remind yourself no patient with addiction voluntarily enters treatment. All are forced into an evaluation/treatment situation because of pressure from family, friends, employer or the court system.

There are risks involved in physician intervention. Presenting a patient with the facts about a condition which is so unacceptable may result in losing the patient from your practice. However, if you don't intervene you enable the disease to progress. Also, physicians face malpractice charges with increasing frequency in such situations, especially if the doctor prescribes mood altering drugs to known alcoholics and substance abusers. Failing to screen, detect or attempt intervention in known cases of substance abuse/addiction puts the practitioner at risk for liability.

There are also rewards. The gratitude the patient and family feels towards the physician who helps them recover is remarkable.

Treatment of Chemical Dependency: A New Field For Physicians

STANLEY M. HAUGLAND, M.D., and
ALAN D. PATTERSON, M.D.,
Des Moines, Iowa

Treatment of alcoholism/chemical dependency is a field still in its infancy, according to many observers. Here, 2 physicians knowledgeable in this area discuss various treatment approaches and the philosophies behind them.

MOST AUTHORITIES ACKNOWLEDGE there is a "mild to severe" or "early to late" continuum in alcoholism/chemical dependency. The continuum varies widely according to the patient and the observer's interpretation of the patient's condition.

Experts generally agree the severity of the disease is gauged more accurately by the number of problems the patient presents rather than the severity of the problems. One patient may have an alcohol-related accident involving life-threatening injuries during the early stage of alcoholism. Another patient may have multiple milder problems such as marital discord or declining job performance. Though these problems are not life-threatening, the patient could be severely addicted.[1]

Treatment varies widely in this rapidly developing field. Much is predicated on what has worked best in the past, particularly through Alcoholics Anonymous (AA). The AA program has profoundly influenced current treatment approaches, especially through its advocacy of abstinence and self-help fellowship.

Shift in Orientation

Another variation noticeable during the past several decades is the shift from symptom orientation and treatment to primary disease orientation and treatment. The symptom orientation believes alcoholism/chemical dependency is a symptom of another problem. Treatment is directed towards fixing that problem, with the assumption this will abate the addiction to mood-altering drugs.[2]

The primary disease orientation believes chemical dependency is a disease in and of itself. The disease process is the addiction and this addiction must be treated to effect satisfactory recovery.

Both of these orientations use similar techniques and personnel but priorities are different. In the primary disease model, the highest priority is treating the drug use/chemical dependency/addiction. The patient's other problems are treated secondly. The goal is assisting

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the patient to substitute one dependency for another. Rather than depending on mood-altering chemicals the patient learns to depend on human beings.

Dr. Vernelle Fox describes it this way: *"Probably the most important element in recovery is a sustained relationship with a peer group whose goals are abstinence and more open and honest relationships with people."*[3]

This is an excellent description of the AA philosophy and the purpose of the primary disease treatment model.

TABLE 1

ALCOHOLISM/CHEMICAL DEPENDENCY
STAGING AND TREATMENT RECOMMENDATIONS[1]

	Stage I (Minimal)	*Stage II (Mild, DSM III-Substance Abuse)*	*Stage III (Maderate, DSM III-Dependency)*	*Stage IV (Severe)*	*Stoge V (Terminol)*
Salient Features	Non-Sacial Drinking Potterns (1+ respanse CAGE &/or 4+ respanses MAYO list.	Stage I plus drinking directly causing significant prablems. Increased tolerance, psychologic dependence. They hove been or are in o "helping system." CAGE 2+, MAYO List 4+.	Stoge II plus physialogic dependency, heolth problems, interruption of socio-economic functioning, positive treotment history.	Stoge III plus seriaus medical syndromes, and loborotory evidence frequently unequivocol.	Stoge IV plus profound deteriorotion of health ond minimol socio-ecanomic functioning.
Treotment Recommendations	Counseling —AA/NA* —90-doy monitored obstinence triol	—AA/NA. If tried ond failed then —Outpotient (OP) course of treotment, if this hos been tried ond foiled then —Inpotient (IP) course of treotment. —Optionol odjunctive ontabuse, Trexon. —The abave follawed by 1 ta 2 years continuing care (CC) ond AA/NA.	—No prior treotment then 1 week inpotient ond 4 weeks outpotient. —History af outpotient treatment foilure during outpotient treatment then —4 weeks inpatient. —CC as in Stage II ond AA/NA. —Adjunctive ontobuse, Trexon. —Adjunctive ontobuse, Trexon.	—No history prior treatment then 2 weeks inpatient and 4 weeks outpotient. —History af inpatient treatment foilure then 4 weeks inpatient ond holfway house. —History of multiple inpatient foilures then inpotient 1 wk halfwoy house. —CC os in Stoge II ond AA/NA.	—Detox os needed, shelter, missions, AA, NA.

* CAGE QUESTIONNAIRE[4]

C — Hove yau ever been odvised to CUT DOWN on your drinking or usoge?
A — Hove you ever been ANNOYED by criticism of your drinking?
G — Have you ever felt GUILTY abaut yaur drinking ar usoge?
E — Have you ever needed ta use an EYE opener the morning after?

* MAYO LIST [5]

1. PREOCCUPATION with alcohol or the next opportunity to drink.
2. INCREASED TOLERANCE for alcohol. The olcohalic con usuolly drink much more than others ond still function relotively well.
3. GULPING DRINKS. He usuolly drinks o double or downs the first couple of drinks ropidly.
4. DRINKING ALONE. This includes drinking in bors, but olone.
5. USE OF ALCOHOL AS A MEDICINE for relief of tension or onxiety or os on aid to sleep.
6. BLACKOUT. Drinking sufficiently such that the next morning brings omnesio for some of the events of the previous evening.
7. SECLUDED BOTTLE. Hoving o bottle secluded in the home or samewhere in cose a drink is needed.
8. NONPREMEDITATED DRINKING. Drinking much more than plonned, or drinking differently from whot one hod plonned.
9. MORNING TREMORS — Fine tremor of fingers from over indulgence.
10. MORNING DRINKING. Ta help one aver o hongover.

*AA — Alcoholics Anonymous
*NA — Narcatics Ananymaus

1. Hougland, S. M. and A. Pattersan. The Powell III Approoch to Chemical Dependency, unpublished/wark 1985.

Treatment Intervention

Assuming a diagnosis of addiction has been made and the physician has elected to intervene, what comes next? At a minimum, Stage I (see Table I, Staging Profile) a monitored 90-day abstinence period is advisable. This will enable the patient to see how important the drug may be in his or her life. If addiction is not present, the regimen will not be a problem. The 90-day trial involves complete abstinence with regular office visits to assure compliance. The office visits should occur every 2 or 3 weeks. Monitoring should include a urine drug screen, serum liver enzymes and a blood alcohol level.

Assessment and/or counseling for other problems the patient may claim are at fault are encouraged at this point. Alcoholics Anonymous or Narcotics Anonymous may also be recommended. At first, some patients may not want to contact the AA but may be willing to do so later.

A "what if" contract should be established with the patient. The patient should agree if the foregoing treatment fails, a course of treatment under Stage II will be tried. The exact type of outpatient/inpatient treatment to be recommended depends on a variety of factors such as availability, family, job and financial considerations. (See Table II, Treatment Modifiers).

Stage II stipulates a course of outpatient treatment involving an intensive series of group therapy sessions in a relatively short period of time. Quality outpatient programs often include 4 hours of treatment 4 or 5 evenings a week for approximately 5 to 6 weeks. This will facilitate the patient in substituting his or her chemical dependency for a healthy dependency on people. Outpatient treatment should be followed by the patient's long-term participation in a mutual self-help group such as AA to strengthen the ongoing recovery process.

Subsequent stages of severity will require more intensive treatment as outlined until the end stage (Stage V) is reached. This stage may persist for years. Once this refractory period is obviously present, rehabilitative treatment is minimal and treatment is basically symptomatic. It consists of providing shelter for the victim and treating any life-threatening complications that arise.

Scientific Progress Encouraging

In conclusion, triage and treatment are still more of an art than a science. However, thanks to a veritable explosion of research in this field and our increasing experience, it will soon become more scientific. The growing body of knowledge that undergirds our work will enable us to more easily separate social use and addiction, more accurately gauge illness severity and more clearly dictate treatment appropriateness.

TABLE II

TREATMENT MODIFIERS
(INPATIENT VS. OUTPATIENT)

1. Con potient obstoin fram oll mood oltering chemicols on on autpatient bosis? If so, outpotient fovored.
2. Is the potient o poly-drug user moking withdrowol hozordous or unpredictoble? If so, inpotient fovored.
3. Is there o history of obstinence syndrome? Which stoge? If so, inpatient fovored.
4. Does the potient have other significont medicol/physicol/mentol problems? If so, inpotient favored.
5. Does the potient hove someone living under the same roof thot con go through on outpotient course of treotment with him/her? If so, outpotient fovored.
6. Does the patient and concerned persan live within 1 hour driving distance of an outpatient center? If so, autpatient favored.
7. Daes the patient need to be seporoted from the fomily becouse of strife or abuse? If sa, inpatient favored.
8. Does the potient need ta be separated from the work environment because af stress? If so, inpotient fovored.
9. Daes the potient need to be seporoted from recreotionol octivities where drinking is common or the norm? If so, inpotient fovored.
10. Are consequences of outpotient treotment foilure very high, e.g. facing prisan? Divorce? Jab loss? If so, inpotient fovored.
11. Whot treotment con the potient ond/or fomily best offord? Prescribing "the best," if the potient connot offord it, is tontomount to na treotment.

However, common sense and caring will still be needed and appropriate. There is much to be said for Dr. Francis W. Peabody's closing words in an address to the AMA in 1927.

"— the secret of care of the patient is in caring for the patient."[6]

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Alcoholism and Depression

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Is mental illness really a root cause of alcoholism? This article explores the role of mental illness and depression in substance abuse and presents evidence which may change some of our perceptions.

MANY OF OUR perceptions about the relationship of alcoholism to mental illness may be untrue. Much of our information has come from retrospective studies, clinical observations and anecdotal patient reports. Research samples have frequently been drawn from clinic populations rather than the general population. This has resulted in selection bias and unwarranted pessimism towards treatment.

The value of prospective studies based on community samples has recently been emphasized by Vaillant.[1] His review of such studies indicates it is time to revise our views about etiology.

For example, the idea an unhappy childhood or broken home leads to alcoholism is no longer tenable.[2] It should not be assumed personality disorder, schizophrenia or some other disease are at the root of alcohol abuse. The adult alcoholic may believe these conditions are the reason for his difficulties and remain blind to the adverse effect of alcohol abuse on behavior, mood, marital and social life.

Many alcoholics come from broken homes and poor social conditions. However, as Vaillant points out, when parent alcoholism is controlled, the effect of broken homes on adult alcoholism disappears. In his review of genetic factors in the etiology of familial alcoholism, Schuckit presents strong evidence to support the view that genetic factors are more important than environmental ones.[3] Although genetic influences are considered influential in development of major mental disorder and alcoholism, no strong evidence has been presented to link the two genetically.

In Clinical Practice

What of the association between alcoholism and depression so frequently seen in clinical practice? As Goodwin asked, "Are alcoholics really depressed people who drink to feel better and better until drinking becomes uncontrolled, a habit with its own propulsion, progressing independently of the depressed feelings that caused it?"[4]

To answer this question it is necessary to separate primary and secondary depressions. A person with primary depression has no other psychiatric illness. A person with a secondary depression has another nonaffective primary psychiatric illness such as anxiety disorder, brain syndrome, alcoholism or a history of same. The clinical picture of primary and secondary depression is similar except as it is modified by the primary psychiatric disorder.

In general, studies do not show primary

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depression is a frequent antecedent of alcoholism. One study found only 12% of alcoholic patients had a primary affective illness.[5] This is close to the occurrence of depression in the general population. Other studies report 2% and 4% of alcoholics have primary depression.[6, 7]

How many alcoholics have secondary depression? At the outset it should be noted alcohol only temporarily relieves depression. This has been confirmed under controlled research conditions by Mayfield.[8] A small amount of alcohol makes an alcoholic or depressive feel better, a large amount makes them feel worse. It should also be noted both alcoholism and depression are frequently associated with suicide. Most suicides occur during or shortly after a drinking episode. Seven studies have reported on the frequency of secondary depression in alcoholics.[6, 7, 8, 9, 10, 11, 12] In nearly all instances the examinations were made shortly after admission to the hospital. Research diagnostic criteria were used to measure alcoholism in depression. The mean percentage of secondary depression found among alcoholics using research diagnostic criteria was 24%.

"Are alcoholics really depressed people who drink to feel better until drinking becomes uncontrolled, a habit with its own propulsion, progressing independently of the depressed feelings that caused it?"

Petty summarized the results of studies which measured secondary depression in alcoholics by means of rating scales.[13] Diagnosis was sometimes made on the basis of a score on the rating scale. The time in which the examination was conducted was not always clear. The mean percentage of depression among alcoholics using rating scales is 52%. It is very probable this figure is over inclusive and rating scales alone are inappropriate for diagnostic purposes.

There is little doubt, however, secondary depression is common among alcoholics. It is aggravated by drinking and sometimes abates when the person stops drinking. Hamm gave alcoholics Hamilton and Zung depression scales 48 hours and 72 hours after admission, and again after 3 and 6 weeks.[14] There was a progressive or pronounced decline in all depressive scores during the period of abstinence.

How alcohol aggravates depression is not known. Alcohol is a toxin associated with many physical and mental impairments. Alcoholism is also associated with marital, social and occupational problems. It is to be expected these adverse consequences will contribute to some elements of the depressive syndrome.

Observations On Treatment

The preceding observations and reports have implications for treatment. The natural tendency for a depression is to remit. Most depressive episodes are self-limiting but their duration may vary considerably. Clinical and research studies indicate depression is worsened by drinking. The first step in treatment is to promote a period of abstinence and observe the effect on depressive symptoms. For many patients, the depressive symptoms will greatly improve or disappear within two or three weeks. If symptoms persist beyond this time and the patient history suggests primary depressive disorder, appropriate antidepressant therapy is indicated.

Finally, the role of antidepressant medication in the treatment of alcoholism must be investigated. If the antidepressant medication relieves alcoholism, it could be concluded alcoholism is caused by depression! The evidence points in the other direction — antidepressants do not relieve alcoholism, but alcoholism probably aggravates existing depression.

References

The references noted in this article are available on request either from the author or the editors of IOWA MEDICINE.

Ethanol Trauma Syndrome (ETS)

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Over 30% of all E.D. and hospital admissions each year for trauma are related to ethanol use.[6, 8, 11, 15, 16, 17] This article explores the symptomatology of Ethanol Trauma Syndrome (ETS). It also discusses the physician's special role in identifying and treating this serious health problem.

ETHANOL USE HAS HAD NEGATIVE effects on societies since biblical times, being documented in ancient Roman history as a problem. Mind altering chemicals (opium, cocaine, improved distillation of ethanol) were first written about as a societal concern in the 16th century.[1]

Physicians are in a strategic position to help detect and control ETS, one of society's largest health problems. This paper will focus on 3 main components of ethanol trauma disorder: 1) Current scientific facts outlining the scope of this health issue, 2) Characteristics, identification and management of Ethanol Trauma Syndrome (ETS), and 3) Recommendations for education, funding, control and prevention of ETS.

Ethanol dependency has been studied and scientifically documented for almost 200 years (Benjamin Rush).[2] Since the advent of doctors' offices, hospitals, emergency departments and trauma centers, ETS has been seen but not properly diagnosed. Careful studies on ethanol use disorders among hospital trauma patients continue to document an unusual number of individuals with ETS or ethanol dependency. However, this diagnosis does not appear in the emergency department (E.D.) assessment, admission history and physical, or in discharge planning and follow-up summary.[2-6]

Our study of 800 ETS patients revealed the following clinical information is not ascertained routinely: 1) Assessment as to toxicological cause of the trauma; 2) Detailed recent and past history of ethanol use and previous trauma, and 3) Ethanol dependency assessment or referral for evaluation and treatment. When the patient has obvious organ toxicity or past history of ethanol dependency, appropriate documentation is found.

Clinical discussion of *why* the patient had the trauma related to ethanol use, correlating past history of trauma, family ethanol use or dependency, hemoglobin mean corpuscular volume, gamma-glutamyl transpeptidase and blood ethanol correlation were usually not documented. However, blood ethanol levels and alcointoximeter readings are well documented and studied.[7-10]

Magnitude of the Problem

The incidence of ETS and ethanol related trauma is well documented. The 1985 summer issue of *Alcohol, Health and Research World* is dedicated to this subject.[10]

Each year, 70 million Americans are injured at a cost of 80 billion dollars, one of our largest expenditures for health care.[11] Over 10% of these injuries are related to ethanol use.

Five percent of the male population meet

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diagnostic criteria for ethanol dependency. Prevalence of non-dependent ethanol users with individual, family, work and health problems vary from 15-35% of the male population.[20] Over 100 million Americans are ethanol users.

Profile of ETS Patient

- Age: usually 18-39, average 29.
- Sex: male-female, 12-1.
- Two or more E.D. visits for ethanol use related accidents and violent behavior.
- Multiple hospital and E.D. visits for ethanol use medical problems.
- History of more head injuries than non-user trauma patients.
- History of greater utilization of mental health and counseling interventions.
- Assessed and treated by several different physicians.
- Usually never been evaluated by history, physical exam or laboratory for ethanol dependency.
- Identified on medical record as uncooperative, intoxicated, refusing treatment, slurred speech, staggering gait. Doesn't keep appointments, wants stronger pain pills and has an "alcohol odor" on his breath (ethyl alcohol is colorless, clear and odorless).
- Usually has had a serum ethanol level or breath alcointoximeter test done.
- Usually has not had a gamma-glutamyl transpeptidase, the MAST Test,[4] the CAGE Test or the Skinner *et al* Trauma Scale Test[5] to determine if ethanol dependency or ETS exists.
- No family history of dependency documented; the family usually has not received medical information about the problem.
- Arrested for ethanol use behaviors or driving while under the influence of ethanol.
- Females over 40 with fractures, dislocations of extremities.
- Admitted for major fracture and surgical care but not evaluated for ETS.
- Usually has not had any systematic, professional or medical diagnosis made of ETS. Has not had consultation, referral, education or treatment of this disorder.

These findings are from our ethanol trauma registry and from medical literature on ethanol use trauma.)

ETS Epidemiology

Traditionally, physicians in clinical practice do not evaluate WHY a patient is injured. The standard of care is to treat the patient's injury. Physicians can help decrease significant morbidity and premature mortality of ethanol associated illnesses.[25] Physicians need to ascertain why patients sustain injuries and then educate them.

Research has shown accidents are fairly predictable. Epidemiologists have developed models to help explain injury occurrence. These models involve the individual levels of performance and the demands of the task being carried out. As long as the individual's performance level exceeds the demands of the task, the "energy source" (the car one drives) remains under control. The moment the energy source is no longer under control, an ac-

(Please turn to page 122)

TABLE II

ETHANOL TRAUMA SYNDROME

Management Guidelines

1. EMPHASIZE EARLY IDENTIFICATION
   - Socially stable individuals in earlier stages of problem ethanol use have a better prognosis (before ethanol dependency irreversible disease)
2. CONDUCT A SYSTEMATIC ASSESSMENT
   - Examine patterns of alcohol and drug use
   - Assess the degree of alcohol dependency
   - Review medical history and behavioral functioning
   - Genetic history, spouse/parents with chemical dependency
   - Victim of family abuse
3. ENGAGE IN A SINGLE COUNSELING SESSION
   - Review assessment findings with patient and family
   - Present evidence of physical damage related to ethanol use (for example, raised GGT, MCV)
   - Emphasize responsibility of the patient and family for working on goals
   - Set ethanol use goals (abstinence or decrease per day or per week)
   - Set goals for attainable success and increased self-worth
   - Refer (if needed) to other agencies or professionals, chemical dependency program
4. PROVIDE SELF-HELP MANUALS
   - Prescribe steps to stop or control ethanol use
   - Provide guidance in other areas (for example, stress management, alternative activities)
5. CONDUCT PERIODIC FOLLOW-UP
   - Ask patients to keep a daily ethanol use log
   - Monitor physical indicators of heavy ethanol use (GGT level, SGOT)
   - Review progress on goal attainment
   - Use of tranquilizers
   - Refer (if needed) to other agencies or professionals, AA, AL-ANON, ETS Groups, parents of adolescents to Tough Love.

Modification, Skinner — Holt[20]

cident is likely to happen (Dufour and Moskowitz).[10]

Studies of ethanol effects suggest only one-third fluid ounce can produce performance deficits. Ethanol also reduces an individual's awareness of being impaired. Risk taking decisions while driving increase at 0.10% blood alcohol concentration (BAC). Clayton found driving and flying skills are impaired at BAC levels of 0.04 to 0.05%, or 2 equivalent ethanol containing beverages on an empty stomach.[10] Mookherjee's results supported the argument ethanol in combination with other characteristics (such as disrespect for the law or peer influence) leads to high risk driving and accident proneness. Children and adolescents have a higher risk for ethanol effects because of its toxicity on brain function and motor performance and because of their low tolerance to ethanol.[27]

TABLE IA

CHECKLIST OF POSSIBLE EARLY INDICATORS OF ETHANOL USE PROBLEMS OF DEPENDENCY

HIGH RISK FACTORS:
- Often has more than six drinks per day (>80 g/d ethanol)
- Concern about ethanol use by self or family or both
- Intellectual impairment, especially of abstracting and adaptive abilities
- Eating lightly or skipping meals when using ethanol
- Drinks quickly; increased tolerance
- Accidents in which ethanol is involved
- Tardiness or absence from work because of ethanol use
- Most friends are heavy ethanol users, most leisure activities involve ethanol use
- Frequent use of ethanol to deal with stress, anxiety, depression
- Attempts to decrease ethanol use have had limited success
- Frequent ethanol use during the working day (for example, at lunch break)
- Heavy smoker
- Parent(s) were or are chemically dependent

LABORATORY TESTS
- GGT:
  - elevated serum gamma-glutamyl
  - transpeptidase (except in patients with nonalcoholic liver disease and those taking other drugs)
- MCV:
  - macrocytosis without anemia
- BAC:
  - random blood alcohol level greater than 80 mg/dl; BAC 0.150 percent and patient doesn't appear intoxicated.

CLINICAL SYMPTOMS AND SIGNS
- Trauma
- Scars unrelated to surgery
- Hand tremor
- Breath odor of alcohol during the day
- Dyspepsia
- Morning nausea and vomiting
- Recurrent diarrhea
- Pancreatitis
- Hepatomegaly
- Polyuria
- Impotence
- Palpitations
- Hypertension
- Insomnia; nightmares
- Wants or is on Benzodiazepine Tranquilizers

LEGAL
- Has been arrested for driving under the influence (diagnostic of chemical dependency)[28]
- Public intoxication

Modification, Skinner — Holt[20]

TRAUMA: Major Sign of Ethanol Dependence

10-50% of the trauma patients seen in emergency departments are there because they use or are dependent on ethanol. All trauma patients need to be evaluated for ethanol or other mind altering drug use. Trauma is a major sign of ethanol dependency.[28]

All trauma patients cared for by ambulance professionals must be evaluated for ethanol and drug use. This information should be documented on the patient care form and related to the E.D. physician. The E.D. medical team obviously must care for the trauma patient's organ problems, and also begin an evaluation of why the patient sustained the injury.

Diagnosing ETS and Ethanol Dependency

All professional ambulance EMT's, paramedics, nursing and medical personnel who provide care for trauma patients must be educated to recognize trauma as a significant sign of ETS or ethanol dependence. All emergency departments and their medical teams need standardized protocols on how to ascertain the likely cause of the trauma and proper patient disposition. Medical literature describes explicitly successful medical intervention techniques and patient outcomes.[4-6, 20, 29]

Emergency Department Patient Evaluation

- Prehospital care by ambulance personnel — identify and document ethanol and drug use signs at the scene. (Ethanol breath or blood

(Please turn to page 123)

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april 18-20 • des moines marriott hotel

SCIENTIFIC SESSION

The 1986 Scientific Session of the Iowa Medical Society will be held in conjunction with the Annual Meeting of the IMS House of Delegates April 18, 19 and 20 at the Marriott Hotel in Des Moines. There will be a full day of scientific programming on Friday, April 18 beginning at 8:50 a.m. A two-hour session on risk management is scheduled at 3:00 p.m. on Saturday, following the opening session of the House and reference committee hearings. On Sunday, the Scientific Session will conclude with a special breakfast program. The final session of the House will convene at the conclusion of the program.

PROGRAM COMMITTEE

Richard K. Green, M.D., Council Bluffs, is chairman of the 1986 IMS Program Committee. Other members are Don C. Green, M.D., Des Moines; John W. Olds, M.D., Des Moines; Ronald Reider, M.D., Cedar Rapids and Ian M. Smith, M.D., Iowa City.



DR. R. GREEN



DR. D. GREEN



DR. OLDS



DR. REIDER



DR. SMITH

HOTEL RESERVATIONS

The Marriott Hotel is headquarters for the 1986 IMS Scientific Session and Annual Meeting. Room reservations may be made by calling or writing the Marriott Hotel, 515/245/5500, 700 Grand Avenue, Des Moines 50309. Please request that your room be taken from the block reserved by the IMS.

PRESIDENT'S GREETING

Welcome to the 1986 IMS Scientific Session and Annual Meeting. Two major themes dominate this year's program: care of the elderly and risk management. An excellent series of presentations has been arranged. The program is designed specifically to enhance the physician's medical knowledge and professional competence.



DR. MATHIASEN

A special luncheon is scheduled on Friday, featuring a presentation on the reorganization of state government by H. Edward Yelick, director of State Government Restructuring, State of Iowa. At a breakfast session on Sunday, John J. Ring, M.D., a Trustee of the American Medical Association, will provide a national perspective on some of the medical/socio-economic issues confronting the elderly. He will then join a panel of individuals directly concerned with problems of the elderly for a general discussion. There will be ample opportunity during the entire program for questions and comments from the audience.

I commend the members of the Program Committee for their efforts in developing this continuing education program, and hope that each participant has a rewarding and enjoyable experience.

Emmett B. Mathiasen, M.D., President
Iowa Medical Society

PROGRAM

FRIDAY, APRIL 18
MARRIOTT HOTEL

8:00 A.M. — REGISTRATION INFORMATION

EARLY BIRD CONTINENTAL BREAKFAST



DR. BENSON

GENERAL SESSION

8:50 A.M. — WELCOMING REMARKS

Emmett B. Mathiasen, M.D.,
Council Bluffs
President, Iowa Medical Society

CARE OF THE ELDERLY



DR. R. S. BROWN



DR. R. T. BROWN



DR. FEISELMANN



MR. YELICK

9:00 A.M. — DIFFERENTIAL DIAGNOSIS AND TREATMENT OF DEMENTIA — BALDRIDGE-BEYE MEMORIAL LECTURE — IOWA MEDICAL FOUNDATION

Dalton Benson, M.D.,
Montrose, New York
Chief of Intermediate Medicine
FDR Veterans' Administration Hospital

9:30 A.M. — COUNSELING THE FAMILY CARE GIVERS — FAMILY PRACTICE ANNUAL LECTURE, WATERLOO MEDICAL SOCIETY MEMORIAL

Karen Freda, M.S.W., Moline, Illinois
Executive Director
Alternatives for the Older Adult, Inc.

10:00 A.M. — MALE/FEMALE MORTALITY COMPARISON (WHY ARE WE LOSING MORE MALES THAN FEMALES AT AGE 60-70)

Ian M. Smith, M.D.,
Iowa City
Professor of Internal Medicine
University of Iowa College of Medicine

10:30 A.M. — RECESS

10:45 a.m. — CHRONIC PULMONARY DISEASES OF THE ELDERLY — ARTHUR ERSKINE MEMORIAL LECTURE

John Fieselmann, M.D., Des Moines
Chief of Internal Medicine
Veterans' Administration Medical Center

11:15 A.M. — VISUAL PROBLEMS IN THE ELDERLY

Robert S. Brown, M.D., Des Moines
Private Practice of Ophthalmology

11:45 A.M. — EVALUATING THE DIZZY PATIENT

Robert T. Brown, M.D., Des Moines
Private Practice of Otolaryngology

12:00 NOON — RECESS

12:15 P.M. — LUNCHEON PROGRAM; THE PLEASURES AND PAINS OF REORGANIZING STATE GOVERNMENT

H. Edward Yelick, Des Moines
Director of State Government Restructuring
State of Iowa

1:30 P.M. — PAIN MANAGEMENT AND SYMPTOM CONTROL IN TERMINAL ILLNESS

Mark C. Johnson, M.D., Mason City Private Practice of Internal Medicine



DR. WINTERMEYER



MS. GOMEZ

2:00 P.M. — PRACTICE PEARLS

- VACCINES FOR SPECIAL OCCASIONS
- BOTTOM LINE ON AIDS

  Laverne A. Wintermeyer, M.D., Des Moines
  Director of Infectious Disease Control
  State Epidemiologist
  Iowa State Department of Health
- URINARY INCONTINENCE

  Ian M. Smith, M.D., Iowa City
  Professor of Internal Medicine
  University of Iowa College of Medicine
- CURRENT TREATMENT OF DECUBITUS ULCERS

  Geri Gomez, R.N., Des Moines
  Enterostomal Therapist
  Nurse Clinician I
  Mercy Hospital Medical Center

2:45 P.M. — RECESS

3:00 P.M. — HOW TO AVOID BEING SUED: AN EXERCISE IN RISK MANAGEMENT

Thomas A. Finley, J.D., Des Moines
A partner in the firm of Duncan, Jones, Riley and Finley

Mr. Finley and several other lawyers will discuss important aspects of risk management, including: treatment standards, informed consent, abandonment, documentation, expert witnesses. A status report on IPMIT/AMACO will also be provided. This program will continue on Saturday with a two-hour "mock trial" session. Audience participation is encouraged.

5:00 P.M. — ADJOURNMENT

SATURDAY, APRIL 19
Marriott Hotel

8:30 A.M. — IMS HOUSE OF DELEGATES/OPENING SESSION

1:30 P.M. — REFERENCE COMMITEE HEARINGS

3:00 P.M. — THE TRIAL AND THE VERDICT — CONTINUATION OF THE RISK MANAGEMENT PROGRAM

An actual medical liability case will be presented, with testimony on both sides of the issue. The audience will serve as the jury and will submit a verdict. After the mock trial has been completed, the verdict in the actual case will be revealed. Audience participation is encouraged.

5:00 P.M. — ADJOURNMENT
6:00 P.M. — PRESIDENT'S RECEPTION

7:00 P.M. — ANNUAL BANQUET

SUNDAY, APRIL 20
Marriott Hotel

7:00 A.M. — BREAKFAST



DR. RING

7:45 A.M. — THE AMA AND THE ELDERLY

John J. Ring, M.D., Mundelein, Illinois
Member of the Board of Trustees
American Medical Association

8:15 A.M. — RECESS



DR. R. GREEN



MR. CRABB

8:30 A.M. — CONCERNS OF THE ELDERLY: PANEL DISCUSSION

Frank Crabb, Denison
Chairman of the Legislative Committee
Iowa Chapter, American Association of Retired Persons



MR. NELSON



MS. TYNES

William R. Nelson, Waterloo
Octogenarian

Doctor Ring

Karen L. Tynes, Des Moines
Executive Director
Iowa Commission on Aging

Richard K. Green, M.D.,
Council Bluffs
Moderator
Chairman, IMS Program Committee

9:30 A.M. — ADJOURNMENT

10:00 A.M. — FINAL SESSION/IMS HOUSE OF DELEGATES

CME CREDIT

The 1986 Scientific Session of the Iowa Medical Society is jointly sponsored by the University of Iowa College of Medicine. The University of Iowa College of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians and designates this CME activity as meeting the criteria for 9 hours in Category I of the Physician's Recognition Award of the American Medical Association. In addition, the program has been reviewed and is acceptable for 9½ hours of prescribed credit by the American Academy of Family Physicians.

LUNCHEON

A dutch-treat luncheon is scheduled Friday noon, with H. Edward Yelick as the guest speaker. Mr. Yelick is the Director of State Government Restructuring, by appointment of the Governor. He will discuss the "Pleasures and Pains of Reorganizing State Government."

BREAKFAST

John J. Ring, M.D., a Trustee of the American Medical Association, will be the guest speaker at a special breakfast beginning at 7:00 A.M. on Sunday. His topic is "The AMA and the Elderly."

BANQUET

The Annual Banquet will be Saturday evening, April 19. IMS awards will be presented during the banquet and special entertainment has been arranged.
A President's Reception will precede the banquet from 6:00 to 7:00 P.M.

MEETING FACILITIES

The Marriott Hotel has excellent meeting facilities. All sessions will be held on the Second Level, and specific room assignments will be posted. The IMS Registration Booth for both the Scientific Session and the House of Delegates meeting will also be located on the Second Level.

1986 SCIENTIFIC PROGRAM PREVIEW

Synopses of some 1986 Scientific Session presentations are included below:

CARE OF THE ELDERLY

"My presentation will cover the dynamics of caregiving, the potential for abuse or neglect and individual and group intervention with caregivers." — Karen Freda, Executive Director, Alternatives for the Older Adult, Inc., Moline, Illinois.

"I will discuss basic, practical evaluation of the dizzy patient with emphasis on differential diagnosis." — Robert T. Brown, M.D., Des Moines, Private Practice of Otolaryngology.

"I will discuss the issues of longterm care, medical malpractice and quick dismissal from the hospital." — Frank Crabb, Legislative Committee Chairman, Iowa Chapter, American Association of Retired Persons.

"My presentation will involve concerns of Iowa's elders from a state planning and advocacy perspective. The focus will be the growth of Iowa's grand elders." — Karen L. Tynes, Executive Director, Iowa Commission on the Aging.

"I will discuss living with and caring for a person with Alzheimers, including maintaining cleanliness and other care." — William R. Nelson, Waterloo, octogenarian.

"I will discuss laser treatment of glaucoma, dry eyes, cataracts and future developments currently being researched." — Robert S. Brown, M.D., Des Moines, Private Practice of Ophthalmology.

PAIN MANAGEMENT IN TERMINAL ILLNESS

"My presentation will cover therapeutic interventions directed at symptom control and palliation. I will discuss political apsects of pain control in a multidisciplinary setting and the fact that symptom control must recognize 'total pain.'" — Mark C. Johnson, Mason City, Private Practice of Internal Medicine.

ACKNOWLEDGEMENTS

The physician members of the Iowa Medical Society give special thanks to the companies listed below for the educational grants provided to support the 1986 IMS Scientific Session:

Ayerst Laboratories
Blue Cross/Blue Shield of Iowa
Eli Lilly and Company
E. R. Squibb & Sons
Parke-Davis Company
Roche Laboratories
Smith Kline and French Laboratories
The Upjohn Company

The Iowa Thoracic Society has arranged for the presentation on "Chronic Pulmonary Diseases of the Elderly."
Appreciation is also extended to Blue Shield for sponsoring the coffee functions for physicians and their spouses, and to the University of Iowa Foundation and the College of Medicine for hosting the President's Reception.

ANNUAL BANQUET

Saturday Evening, April 19

Featuring

- Presentation of Awards
- Special Guests
  - — The Honorable Terry Branstad
    Governor, State of Iowa
  - — The Honorable Jim Lightfoot
    U.S. Congressman
    First Congressional District
  - — John J. Ring, M.D.
    AMA Trustee
- A Presentation on Medicine and the Law
  By Doctor Tom Murphy
- Special Entertainment

1986 SCIENTIFIC SESSION REGISTRATION FORM

Please detach and return this form to
IMS HEADQUARTERS

	I PLAN TO ATTEND — PLEASE CHECK	NUMBER ATTENDING
The Scientific Session		
On Friday, April 18	_____	_____
On Saturday, April 19	_____	_____
On Sunday, April 20	_____	_____
Friday Luncheon Program ($10.50)	_____	_____
Saturday Annual Banquet ($25.00)	_____	_____
Sunday Breakfast Program ($7.50)	_____	_____

Advance payment for meal functions is welcomed and encouraged
Please make checks payable to the Iowa Medical Society

Name (Please print) _____

Address _____

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Call 515/245-5500

testing completed as per medical control or protocol.)

- Emergency medical team advised per radio of incoming trauma patients and prepare for life-sustaining treatment and patient evaluation.
- All patients seen in emergency settings should be evaluated for chemical use as a standard part of nursing and medical assessment: ethanol, tobacco, caffeine, etc.[30] If the patient cannot be assessed, the family should be asked. Chemical use should be a separate section in the medical history. (Table IA)
- Pertinent history and physical exam, history being the most helpful for ETS and ethanol dependency documentation.[20] See Table IA. (Basic ethanol use questions, trauma scale questionnaire, past medical history and genetic history take but a few minutes.) See Table IB, MAST,[32] CAGE,[33] Skinner *et al.* Trauma Scale questionnaire,[5] and genetic history (Schuckit),[34, 35] (Goodwin),[36] (Hegedus).[37]
- Laboratory:

a) Breath alcointoximeter done ASAP; serum and urinalysis for ethanol or other mind-altering chemical levels.

b) hemoglobin, mean corpuscular volume-macrocytosis screen.

(Please turn to page 124)

TABLE IB

STANDARD EVALUATION FOR ETS — TRAUMA INVENTORY

Trauma scale questionnaire to detect early ethanol use disorders and/or dependency.

(Nurse or Physician can complete patient exam. Document questions and results in the medical record.)

1. Have you had any fractures or dislocations of your bones or joints?	Yes _____	No _____
2. Have you been injured in a road-traffic accident?	Yes _____	No _____
3. Have you injured your head?	Yes _____	No _____
4. Have you been injured in an assault or fight (excluding or *not* counting injuries during sports)?	Yes _____	No _____
5. Have you been injured while using Ethanol?	Yes _____	No _____
6. Is anyone in your family Ethanol dependent?	Yes _____	No _____
7. Are you dependent on tobacco?	Yes _____	No _____
8. Did you start using Ethanol/tobacco before age 18?	Yes _____	No _____

If the patient has an elevated MCV, an elevated gamma gt* and answers two or more yes questions 1-5, the patient has a greater than 70 percent probability of having ETS or Ethanol dependency. The patient needs more work-up, counseling, education and when possible, involve the family in more assessment to decide what treatment is needed. If questions 6-8 are answered yes, this greatly increases the risk of Ethanol use disorders and/or dependency.

Skinner *et al* (Modified Language)

The Brief Michigan Alcoholism Screening Test	*Circle correct answers*		*Points*
1. Do you feel you are a normal Ethanol user?	Yes	No	No 2
2. Do friends or relatives think you are a normal Ethanol user?	Yes	No	No 2
3. Have you ever attended a meeting of Alcoholics Anonymous?	Yes	No	Yes 5
4. Have you ever lost friends or girlfriends/boyfriends because of Ethanol use?	Yes	No	Yes 2
5. Have you ever gotten into trouble at work because of Ethanol use?	Yes	No	Yes 2
6. Have you ever neglected your obligations, your family or your work for two or more days in a row because you were using Ethanol?	Yes	No	Yes 2
7. Have you ever had delirium tremens (DTs), severe shaking, heard voices or seen things that weren't there after heavy Ethanol use?	Yes	No	Yes 2
8. Have you ever gone to anyone for help about your Ethanol use?	Yes	No	Yes 5
9. Have you ever been in a hospital because of Ethanol use?	Yes	No	Yes 5
10. Have you ever been arrested for drunk driving or driving when using Ethanol?	Yes	No	Yes 2

Score 6 = probable diagnosis of Ethanol Dependency
Pokorny *et al*[32] (Modified Language)

The CAGE Questions		
1. Have you ever felt you should Cut down on your Ethanol use?	Yes	No
2. Have people Annoyed you by criticizing your Ethanol use?	Yes	No
3. Have you ever felt bad or Guilty about your Ethanol use?	Yes	No
4. Have you ever had to use Ethanol first thing in the morning to steady your nerves or to get rid of a hangover (Eye-opener)?	Yes	No

Two or more affirmative = probable diagnosis of Ethanol Dependency

Moyfield *et al*[33] (Modified Language)

c) gamma-glutamyl transpeptidase.

When the history, physical exam and laboratory identify chemical use as a potential cause of the patient's trauma, the primary physician has several options. These depend on training, intervention skills, hospital and community setting.

ETS Patient Discussion

- State the diagnosis and the potential cause of the injury to the patient. Document ETS or ethanol dependency in the medical record and discharge summary.
- Discuss genetic factors and the increased risk of ethanol use morbidity and mortality. Ethanol use is the second leading cause of premature death.[25]
- Involve the family in the discussion of side effects of ethanol use (family abuse, children of alcoholism syndrome).
- Discuss goals to decrease ethanol use.
- Utilize patient education material on ethanol use trauma[38] and self-help manuals.[20] Structured follow-up appointments should be scheduled until the patient and family understand ETS and meet treatment goals.

Depending on clinical stability and degree of ethanol impairment, patients may be offered detoxification admission or direct admission for treatment to a chemical dependency unit. The primary care or trauma physician may wish to refer the patient to the chemical dependency consultation physician or team for further assessment and treatment. The young adult patient should be referred on the first ethanol use trauma visit.

Hospitals, communities and AA groups may have 24-hour ethanol use intervention teams who come to the E.D. or hospital to consult or intervene with the patient and family (Roger Williams Model),[39] (Stephenson Model)[40] and (Hemphill Model).[26] (Table II)

A difficult factor to overcome in dealing with ETS is the "Quadruple Passivity Syndrome." The patient does not want to talk about ethanol use and denies it is a health problem. The physician does not want to ask about the patient's ethanol use and denies it is a health problem. Studies show patients are willing to discuss their ethanol use if the physician asks.[20]

Management and Prevention of ETS

- Education of the public (including all school age children), the legal profession, nurses and the medical profession.
- State and local medical societies implement programs to control this unchecked epidemic. Implement the AMA report from its Council on Scientific Affairs on Ethanol and Trauma.
- Trauma centers include a chemical dependency counselor on the medical team.
- Quality assurance audits done at every hospital admitting trauma patients. The audits will identify problems in managing ETS patients.
- Insurance companies, peer review organizations and JCAH develop criteria to establish optimum DRG reimbursement, protocols for management and trauma service care standards for diagnosing and treating ETS.
- Labeling and advertising which outlines the danger of ethanol-containing products and the health disorders it causes for users. Approximately 70 deaths per day in the U.S. are caused by ethanol use disorders.[41]

References

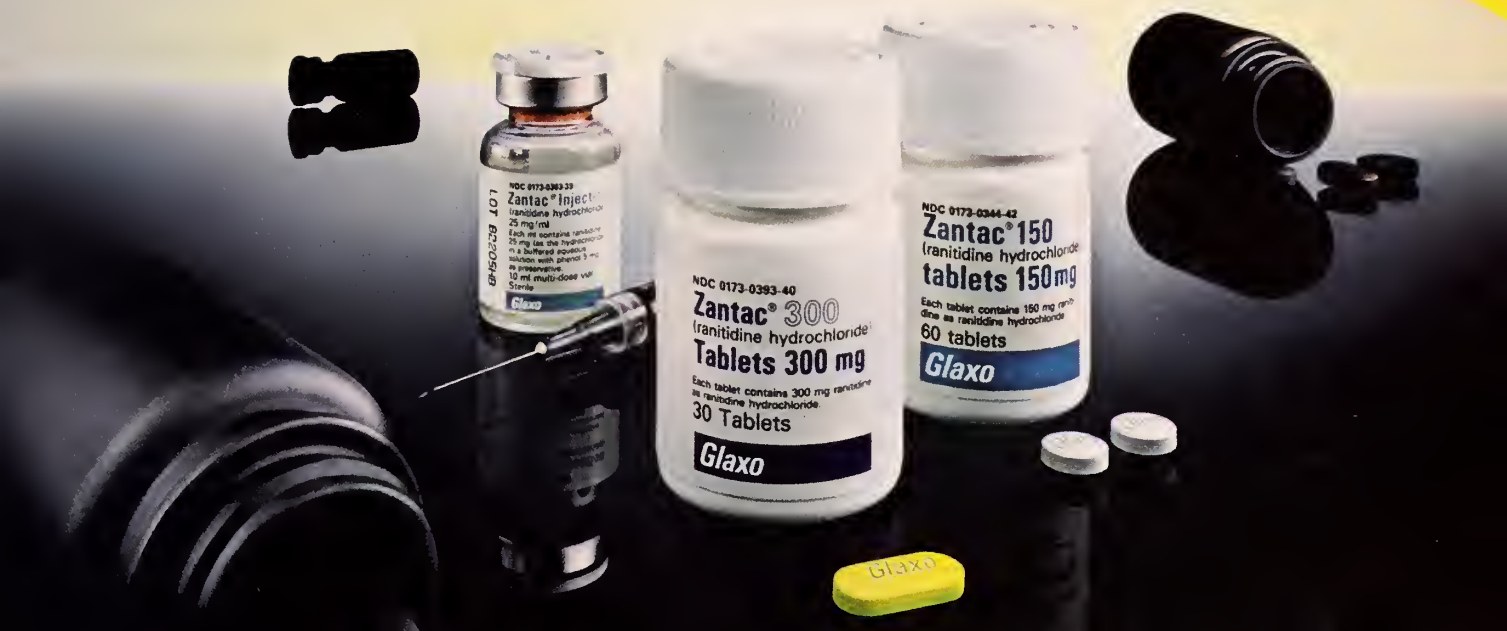
The references noted in this paper are available either from the author or the editors of IOWA MEDICINE.

IMS COMMITTEE ON ALCOHOLISM AND DRUG ABUSE

Leadership on behalf of the Iowa Medical Society in the area of alcoholism and drug abuse is provided by a 12-member committee. This committee has planned and developed the editorial content of this issue.

The members are James F. Stiles, M.D., Cedar Rapids (chairman); John F. Collins, M.D., Davenport; Steven R. Eckstat, D.O., West Des Moines; L. Z. Furman, M.D., Ames; Stephen C. Gleason, D.O., West Des Moines; Stanley M. Haugland, M.D., Des Moines; William L. Jackson, M.D., Sioux City; Joseph L. Monahan, M.D., Clinton; Dallas O. Minchin, M.D., Council Bluffs; Loran A. Olson, M.D., Ames; Charles B. Preacher, M.D., Davenport, and Amr Kamhawy, Medical Student, Iowa City.

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March 1986

IOWA METHODIST MEDICAL CENTER
THROCKMORTON SURGICAL SOCIETY
SPRING MEETING

Topic: Hepatobiliary Disease
Date: Friday, April 11, 1986
Place: Jester Auditorium, Iowa Methodist Medical Center
Des Moines, Iowa

Moderator: Bernard D. Mouw, M.D., Surgical Teaching Staff, Iowa Methodist Medical Center

7:30 a.m.	Registration Continental Breakfast
8:00 a.m.	Welcome — Heinz S. Jacobi, M.D., President, Throckmorton Surgical Society
8:10 a.m.	Diagnostic Tests for Biliary Obstruction Steven E. Silvis, M.D., Professor of Medicine, University of Minnesota
8:30 a.m.	Management of Acute Cholangitis James H. Foster, M.D., Professor of Surgery, University of Connecticut
8:50 a.m.	Dissolution of Biliary Cholesterol Stones Johnson Thistle, M.D., Professor of Medicine, Mayo Medical School
9:10 a.m.	Intra-operative Choledochoscopy: Is it of value? David M. Nagorney, M.D., Asst. Professor of Surgery, Mayo Medical School
9:30 a.m.	Choledochoduodenostomy versus Sphincteroplasty Jack Pickleman, M.D., Professor and Chief of General Surgery, Loyola University
9:50 a.m.	Coffee Break
10:10 a.m.	Treatment of Retained Stones with E.R.C.P. Steven E. Silvis, M.D.
10:30 a.m.	Biliary Strictures-Surgical Treatment Jack Pickleman, M.D.
10:50 a.m.	Joseph B. Priestley Memorial Lecture: Surgical Authors — Pride, Prejudice and Responsibility Martin A. Adson, M.D., Professor of Surgery, Mayo Medical School
11:20 a.m.	Panel Discussion
12:00 noon	Pre-lunch — Meet the Faculty
12:15 p.m.	Luncheon — Jester Gymnasium

Moderator: James A. Coil, M.D., Director of Surgical Education, Iowa Methodist Medical Center

1:30 p.m.	Primary Sclerosing Cholangitis, James H. Foster, M.D.
1:50 p.m.	Congenital Cystic Disease of the Hepatobiliary System Robert T. Soper, M.D., Professor of Surgery, University of Iowa
2:10 p.m.	Pyogenic Liver Abscesses Louis D. Rodgers, M.D., Surgical Teaching Staff, Iowa Methodist Medical Center
2:30 p.m.	Intrahepatic Stones: Perspectives in Management David M. Nagorney, M.D.
2:50 p.m.	Coffee Break
3:10 p.m.	Portal Hypertension — Clinical Evaluation and Treatment William P. Mikkelsen, M.D., Clinical Professor of Surgery, University of Southern California
3:30 p.m.	Percutaneous Decompression of Benign and Malignant Biliary Obstruction Thomas Murphy, M.D., Dept. of Radiology, Iowa Methodist Medical Center
3:50 p.m.	Hepatic Tumors — Surgical Considerations Martin A. Adson, M.D.
4:10 p.m.	Panel
4:50 p.m.	Acknowledgments Tom D. Throckmorton, M.D.
5:00 p.m.	Adjournment

This course has been approved for 6 hours CME category I. For more information, call 515/283-6076.

Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



STAINED GLASS WINDOWS

STAINED GLASS is a unique art medium; it offers a beauty and inspiration not present in sculpture and painting. Colored glass has been known since the fourth century B.C. It was first used for stained glass windows in 1144. These windows were and are prominent in Gothic art. Chartres Cathedral is a most notable example.

Byzantium (5th century A.D.) was the last outpost of the Roman Empire. Under 3 different emperors — Constantine I, Julian the Apostolate and Theodosius — the culture was predominately Greek, even though the politics were Roman. As culture became more involved with the past, art turned to mosaics, bas-reliefs, miniatures and stained glass windows. At the same time medicine turned primarily to the records of Greek learning. Monumental tomes were compiled, but little investigation was undertaken. Medicine became a matter of faith; prayers were intoned, priests were the best physicians, and Christ was the Supreme Healer. The church was considered the hospital of the time. Stained glass windows were a part of the church art intended to inspire emotional ecstasy.

The relationship between medicine and religion is historical. Art within churches continues that relationship today. Stained glass windows depict the intertwining of medicine and religion. I have visited several cathedrals that exemplify this fact.

The Washington, D.C. Cathedral has numerous beautiful stained glass windows. The window next to the Rose Window is Physicians Window. The Great Healer is the central figure. Flanking it on the left is a portrayal of Louis Pasteur. On the right is Sir Wilfred Grenfell the noted physician of the Laborador. The lower right segment of the window depicts the traditional country doctor driving a buggy. Whimsically, a stork flies overhead. Another window commemorates Frederick Banting, the discoverer of insulin.

Bath Abbey in Bath, England is another cathedral with a stained glass reference to medicine. Bath Abbey was founded in 1499. In the early 1500's the Abbey was devastated by monastic plunder. The remains were used by an alchemist doing research with the thermal water of the nearby hot springs. In the late 1500's restoration was undertaken and divine services were resumed in 1576.

The South Transept of the Abbey has a loft window of extraordinary height enhanced by fan-tracery, a continuation of the graceful fan-vaulting of the nave. The window portrays the recovery of King Hezekiah and was a thank-offering for the restoration to health of the Prince of Wales, later Edward VII.

THE AGE OF ENGLISH and European cathedrals is phenomenal in contrast to architectural edifices of the United States. Wells Cathedral is another significant English structure. The central tower was raised to its present height in 1315-1322. Later the tower was observed tilting a bit to the west and in 1338 cracks were noted in the walls. Inverted arches were installed in 1340 to transfer the weight to the east by bracing the tower supports. I do not recall any commemoratives to medicine in Wells Cathedral; nevertheless the stained glass windows and architecture were noteworthy.

The Cathedral Church of St. John the Divine in New York City, under construction since 1892, will become the largest Gothic cathedral in the world. There are several bays in the nave that have been furnished as chapels, each

(Please turn to page 128)

COMMENTING EDITORIALLY

(Continued from page 127)

measuring 25 feet wide, 18 feet deep and 48 feet high. The medical bay features St. Luke's Chapel. The stained glass window is enhanced by the reredos of carved English oak. The central figure is St. Luke, the Beloved Physician.

I am certain many churches and cathedrals of the world have stained glass windows of medical interest. It would be satisfying to research the great relationship between medicine and religion as it is depicted by the art of stained glass. Beautiful in its own right, stained glass is enhanced so much by varying angles of sunshine and shadows; it is truly inspirational. It emphasizes there is more to medicine than procedures and medications. We are not alone in our ministrations to the disabled and those in pain and despair. — M.E.A.

LETTERS TO THE EDITOR

On Bleeding Black & Gold

RECENTLY, it has come to my attention that there has been an increase in reports of patients who are actually bleeding black and gold. With this in mind, I will briefly review the entity of hemoglobin SUI. This variant is endemic to Iowa with the first case being reported in 1848. Hematologic findings are noteworthy for the aforementioned black and gold coloring as well as for the pathognomonic Hawkeye cells.

This condition is associated with Hawkeye fever, sweaty palms, palpitations, gyrations, and stereotyped behaviors such as dressing like bees, traveling great distances in large numbers, and an increased desire to donate. In addition, these people have an increased susceptibility to Rose Bowl fever and to NCAA fever.

Epidemiologic studies reveal that Hg SUI is usually familial, but it may be episodic. It rarely may have only partial expression. There have been reports of massive outbreaks over great distances following national telecasts.

Treatment is palliative. Current protocols include support, reassurance, game tickets, and bowl packages. Acute withdrawal from Iowa athletics may result in melancholy, agitation, confusion, and projection behaviors (such as Cub mania). The symptoms of withdrawal may be ameliorated by playing the Iowa Fight Song each day and as needed. Also, a few moments of silent meditation while facing Iowa City has been tried with encouraging results. — TERRY W. COCHRAN, M.D., *Davenport, University of Iowa 1985*

Thanks

I HASTEN before this short winter day ends to write and tell you that over the years I have deeply enjoyed reading and reflecting on your timely and thoughtful editorials.

Your most recent commentary, "Caring: Theme for the Season," in the December issue of IOWA MEDICINE is indicative again of your deep commitment to the art as well as the science of medicine. Each of us needs periodically to reflect on the true nature of our calling and you have stated very well the need, I feel, for extending our best efforts in bringing humanity and humaneness into our daily contacts with patients. I wish you and your family a joyous Christmas and a fine New Year ahead.

Thank you again for your service to all of us here in the state. — JOHN K. MACGREGOR, M.D., *Surgical Associates of North Iowa, P.C., Mason City, Iowa.*

Recent Highlights

U. OF I. COLLEGE OF MEDICINE

AT-A-GLANCE . . . Ian M. Smith, *Internal Medicine, traveled to Ethiopia in December as a representative of the UI College of Medicine and the Iowa Cares Program. Smith lectured at Addis Ababa University's medical college and arranged a faculty exchange program between the UI and the university. He also visited relief centers where Iowa Cares Program volunteers have worked. . . .* ***C. Patrick Burns,*** *Internal Medicine, has been appointed director of the UI Department of Internal Medicine division of Hematology-Oncology. Burns is recognized as a national leader in cancer research. He has been acting director of the division since 1984.*

ACADEMIC AFFAIRS VICE PRESIDENT RICHARD D. REMINGTON *has been appointed chairman of the Committee for the Study of the Future of Public Health, recently established by the Institute of Medicine of the National Academy of Sciences. Remington, Preventive Medicine and Environmental Health, is nationally recognized for his expertise in public health issues. He will guide the panel through its 2-year charter until it issues its final report in 1987.*

A STUDY TO DETERMINE THE EFFECTIVENESS OF ALLERGY SHOTS *in controlling the sometimes severe symptoms of ragweed-induced asthma is underway at the UI College of Medicine.* ***John Weiler,*** *Internal Medicine, says people interested in participating in the UI study must be between the ages of 16-60, have asthma symptoms during August, September and perhaps October, be non-smokers, must not have been on immunotherapy for asthma in the past 3 years and must not have used steroids regularly to control asthma. The UI study is funded by the National Institute of Allergy and Infectious Diseases of the National Institutes of Health. For more information, call 319/356-2135.*

THE IOWA WOMEN'S HEALTH STUDY, *to assess the influence of lifestyle factors in the development of cancer in women ages 55-70, is being conducted by researchers in the UI College of Medicine and the University of Minnesota. A questionnaire was mailed to 100,000 Iowa women in January. It queries the Iowa women about their personal and family medical histories, and about personal health factors including diet, exercise, height, weight and other lifestyle factors, says* ***Robert Wallace,*** *Preventive Medicine and Environmental Health. Researchers will analyze the relationship between the measured lifestyle factors and the participants' current health. Identification of lifestyle factors related to cancer incidence will be useful in efforts to prevent cancer, he says.*

250 IOWA SWINE CONFINEMENT WORKERS *are being surveyed by researchers of the UI Institute of Agricultural Medicine and Occupational Health. Researchers* ***Kelly Donham*** *and* ***James Merchant,*** *Preventive Medicine and Environmental Health, say the 5-year project will evaluate the effectiveness of different methods for preventing respiratory disease in swine confinement workers.*

FUNDS AGAIN ARE AVAILABLE THIS YEAR *for many disabled children and young adults from low-income families to receive free dental treatment.* ***Arthur Nowak,*** *Pediatrics, is director of the Dental Care for Persons With Disabilities program. The UI is continuing its cooperation with the Iowa State Department of Health to sponsor the statewide dental program. Eligible persons up to age 21 can receive preventive and restorative dental care at no cost. Nowak urges professionals who know of children eligible to participate in the free dental program to contact him now while funds are available (319/353-7174).*



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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



MY CULTURAL DEPRIVATION

MY CULTURAL DEPRIVATION is hardly short of astounding. I've never seen a single episode of "Dallas" or "Dynasty," (and I really mean *never*); not seen "Star Wars" or any of its sequels (and if somebody bids the Force be with me, I don't know what that means, although the context usually seems supportive if not theological); not viewed a Super Bowl broadcast (although Iowa's Hawkeyes playing in the Rose Bowl will be a TV attractant); and Rocky, Rambo and their several reincarnations are matters of insurmountable indifference. Maybe all this defines me as a puritan, in spite of my self-perception as relatively liberated.

On the other hand, I do read various articles, reviews, essays, and occasional plays or novels that many good people whom I regard highly (even physician colleagues) might properly consider the utmost waste of time. I justify most of that reading as professionally related. Some colleagues of mine don't watch "Dallas" but are willing to count "St. Elsewhere" as professionally related, and maybe it is, not withstanding all its flaws.

An article of the sort I mention, that is medical yet adds to my store of "culture," was written by a New Haven gastroenterologist, Howard Spiro, whom I've never met (but would like to because he writes articles that I occasionally see and react to warmly). He discussed the medieval classification of learning, divided into the "trivium" of word-related subjects (rhetoric, grammar and logic) and the "quadrivium" of more quantity-related subjects (arithmetic, geometry, astronomy and music). He then said "more emphasis on the trivial would be helpful." I don't think he was attempting a pun — at least not for its own sake — but perhaps had coined the adjective *trivial* out of the noun *trivium*. That can be a risky business, as in this case, where the modern adjective has acquired such a deprecating meaning. I felt amused at his pun, and agreed with the real point — that medical practice has become too dependent on quantifiable measurement.

Strange as it might seem, measurement can also be non-quantifiable. We are indeed *taking measure* of our patients if we notice them to be slow, sad, elated, reticent, troubled, bashful, hostile and so on. We can attempt to merge the trivium with the quadrivium by assigning numerical values (or asking the patient to assign them) to such attributes as pain, satisfaction, or improvement. A hidden problem in such an effort, and it bedevils much clinical research, is the implication that the distance or quantity between 2 and 3, say, on a 10-point scale of depression is "1 unit of depression" and is "equal" to the unit that lies, say, between 6 and 7. Does the "10" (a seemingly objective-because- numerical rating) that Mary Lou Retton received at the Olympics mean a true ultimate — that neither she nor anyone could possibly do better? Would anyone dare argue that the "10" was an *objective* (because numerical) rating and not a *subjective* one?

Dr. Spiro would have physicians spend more time talking with patients and listening to them. The art and the science of medicine perhaps are analogues to the trivium and the quadrivium, respectively. And that is why he urged "more emphasis on the trivial," a way of giving more attention to the art, and thus

(Please turn to page 137)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.



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DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

BROMOCRIPTINE — AN UPDATE

UNLIKE OTHER ANTERIOR pituitary hormones that are *stimulated* by hypothalamic releasing factors, prolactin is under tonic inhibitory control. Several lines of evidence suggest that dopamine is the major hypothalamic factor inhibiting prolactin release: *(a)* Dopamine is present in high concentrations in the hypothalamic-pituitary portal circulation and *(b)* pharmacologic agents that block dopamine receptors or deplete hypothalamic neurons of dopamine cause increased prolactin secretion. The elucidation of the hypothalamic control of prolactin secretion led to the development of semisynthetic ergot alkaloids with structural similarity to dopamine. These compounds directly stimulate neuronal dopamine receptors and act on the basis of prolonged dopamine receptor stimulation. Bromocriptine (2-bromo-alpha-ergotcryptine, Parlodel) is a semisynthetic ergot alkaloid that was specifically developed as an inhibitor of prolactin secretion.

Pharmacokinetics

When administered orally bromocriptine is rapidly absorbed and peak levels occur 1 to 3 hours after ingestion. A single oral dose of 2.5 mg suppresses prolactin by over 60% and the effect can last for 9 to 18 hours.[1] Schram *et al* have shown that first-pass metabolism of the absorbed dose is approximately 94% and only 6% of the absorbed dose reaches the systemic circulation unchanged. The majority of bromocriptine is excreted in the feces and there is a 21-hour lag time representing intestinal passage of the drug.[2] Although the circulating half life is 4 to 8 hours, serum prolactin levels remain suppressed up to 14 hours after a single dose.[3] Bromocriptine is metabolized primarily in the liver, but the biologic activity of the metabolites has not been extensively studied.

Uses

Bromocriptine was first approved for clinical use in the United States in 1978 and the only approved uses for the drug include *(a)* the treatment of amenorrhea, galactorrhea, and infertility associated with hyperprolactinemia, *(b)* the treatment of Parkinson's disease, and *(c)* the prevention of lactation after childbirth.

Hyperprolactinemia

Bromocriptine is used primarily for treatment of hyperprolactinemia associated with prolactin-secreting pituitary tumors. As many as one-third of women with secondary amenorrhea may have hyperprolactinemia and most have galactorrhea and infertility as well. Administration of 5 to 7.5 mg of bromocriptine daily to patients with small pituitary adenomas will result in normalization of prolactin levels in 64 to 100% of patients, restoration of regular menstrual periods in 57 to 100% of patients, and improvement of galactorrhea in over 80%.[4] In most cases normalization of prolactin is also associated with restoration of LH secretion, restoration of ovary folliculogenesis, and normalization of corpus luteum function.[5] Some women may have return of menstrual function as early as 4 to 6 weeks after beginning the drug, and maximum reduction of prolactin levels is likely to take place within the first month.[1] Not all patients respond with a lowering of serum prolactin to bromocriptine

(Please turn to page 134)

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

and some continue to have amenorrhea and galactorrhea despite normalization of serum prolactin.

Large prolactin secreting adenomas (>10 mm) are often associated with headaches or neurological deficits. In addition to restoring normal prolactin levels in these individuals, bromocriptine has been documented to cause a decrease in tumor size and in several cases has been associated with improvement of visual field abnormalities and restoration of gonadal function.[6] The effects of bromocriptine are not sustained when the drug is discontinued. Withdrawal of bromocriptine is associated with rapid resumption of hyperprolactinemia and tumor reexpansion.[7]

Women who have hyperprolactinemia without radiographic evidence of a pituitary lesion are said to have "functional hyperprolactinemia." Bromocriptine is also associated with normalization of serum prolactin in these individuals. Prolactin-secreting pituitary tumors in men can also be effectively treated with bromocriptine but the doses required for normalization of prolactin are substantially higher than those required for women with small pituitary tumors. Women taking bromocriptine to restore fertility should be instructed to discontinue the drug when the first menstrual cycle is missed.

Lactation after Parturition

Bromocriptine has also been used for suppression of lactation after childbirth. In doses of 2.5 to 5 mg daily for 3 weeks, bromocriptine will block the initiation of lactation and will prevent breast engorgement and mastodynia. Two controlled trials comparing bromocriptine with placebo, estrogen, and a combination of estrogen and androgen have shown that bromocriptine is more effective in preventing breast engorgement and suppressing milk secretion.[8]

Parkinson's Disease

The documentation of decreased dopamine in the substantia nigra in patients with Parkinson's disease led to the use of dopamine agonists in this disorder. Although the administration of levodopa in cases of early Parkinson's disease alleviates symptoms, in advanced cases levodopa may be ineffective. Several studies have shown that bromocriptine is superior to placebo therapy and that doses of levodopa may be reduced with the addition of bromocriptine.[9, 10] Kartzinel has reported that bromocriptine is beneficial in the levodopa-induced "on/off" phenomenon characterized by rapid fluctuations between akinesia and choreoathetoid movements.[10] The doses of bromocriptine required for improvement in symptoms in Parkinson's disease are often substantially higher than doses necessary to suppress galactorrhea and restore menstrual function.

Other Uses

Liuzzi was the first to report that bromocriptine acutely lowered growth hormone levels in patients with growth-hormone-secreting pituitary tumors.[11] Subsequent studies have shown that doses of 20 mg per day may be associated with amelioration of some clinical symptoms but a failure to normalize serum growth hormone levels.[12] Lindholm *et al* performed a double-blind crossover study comparing bromocriptine and placebo in patients with acromegaly and found no beneficial effect measuring plasma concentrations of growth hormone after glucose tolerance tests. Although bromocriptine is widely used as a treatment for acromegaly, its role in the treatment of these tumors is not yet established. It *should not* be considered primary therapy for growth-hormone-secreting pituitary tumors.

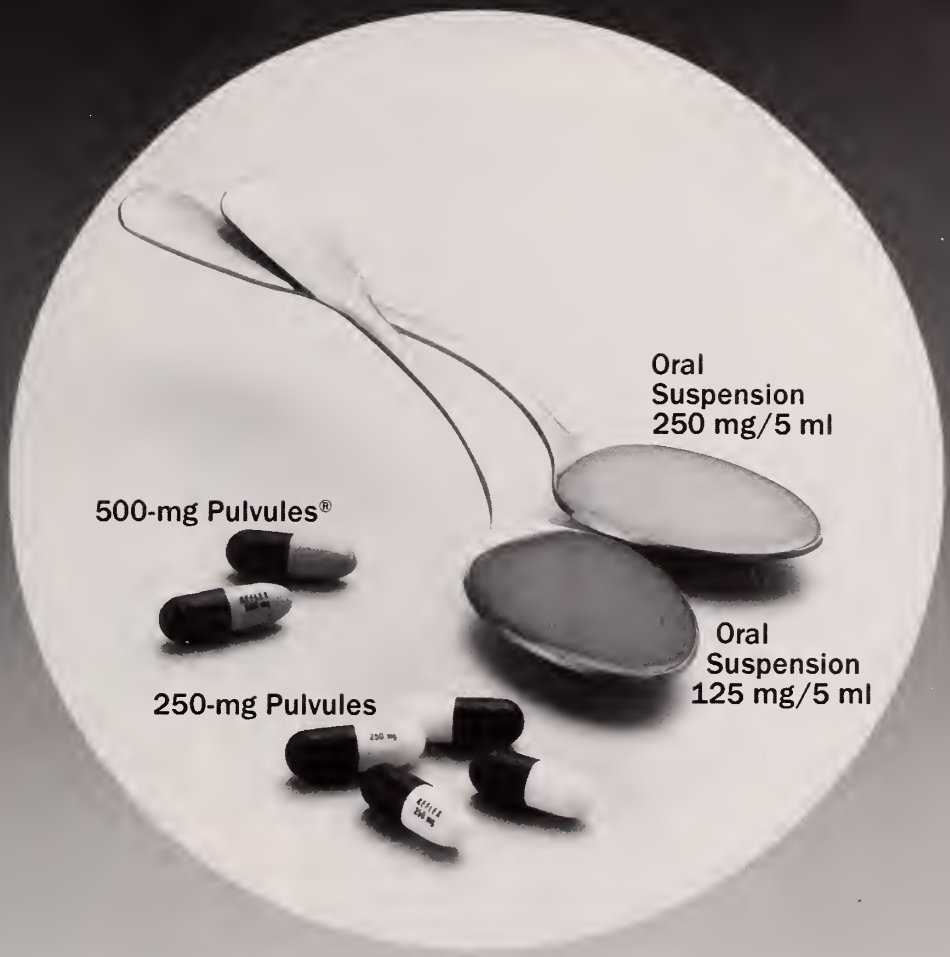
Bromocriptine has also been suggested as therapy for conditions as diverse as idiopathic edema, premenstrual syndrome, hepatic encephalopathy, Huntington's chorea, and luteal phase insufficiency, but there is no conclusive evidence that it has significant benefit in any of these disorders.

Side Effects

The commonest side effects related to the administration of bromocriptine are nausea and orthostatic hypotension. Both symptoms usually occur upon initiation of treatment and may be prevented or greatly minimized by administration of very low doses given at bedtime. If the dose is increased slowly to a therapeutic level over several weeks the medication is usually well tolerated. Patients taking larger doses for Parkinson's disease or for acromegaly may develop peripheral vasospasm. Other com-

(Please turn to page 135)

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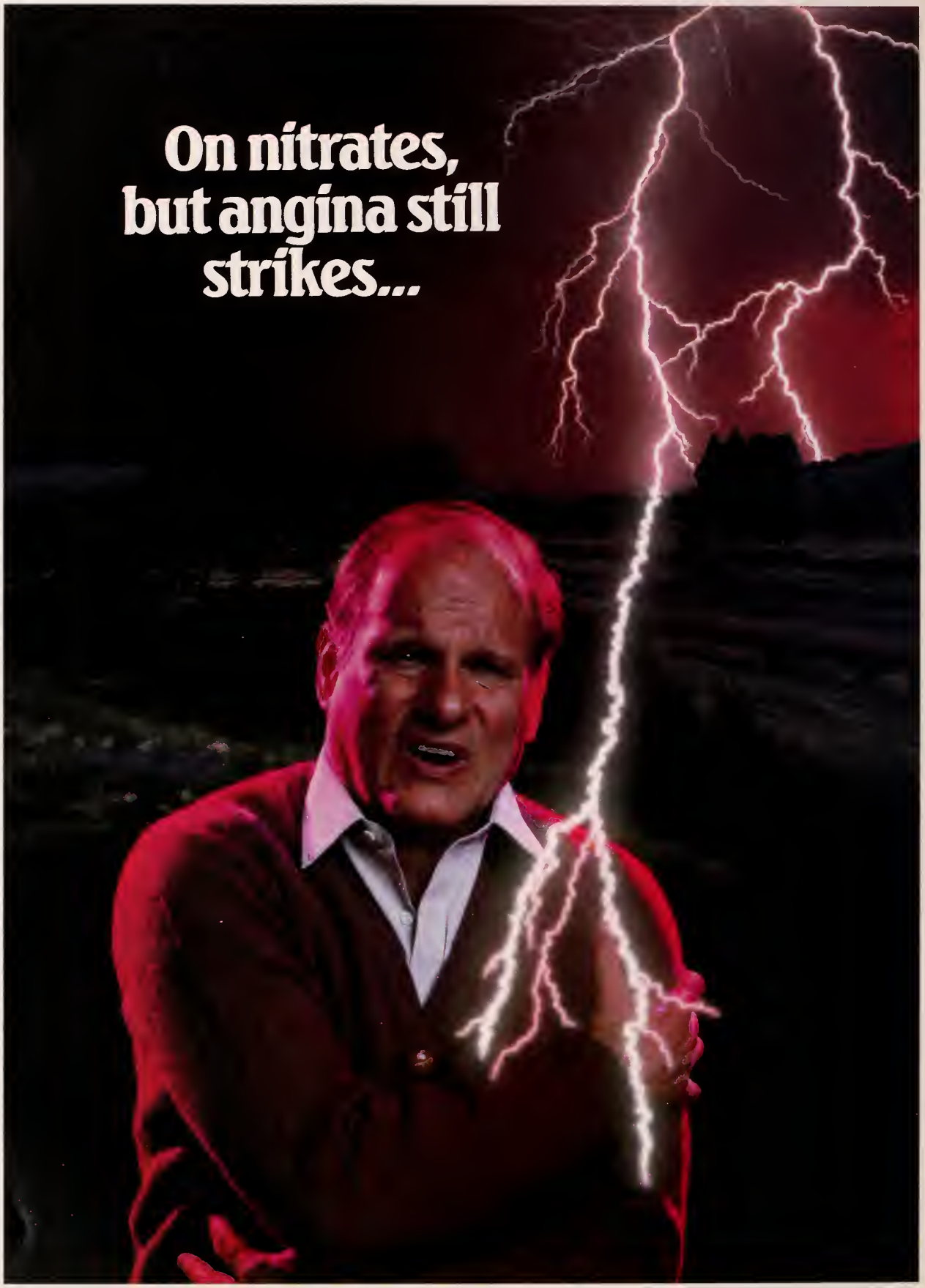


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Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C*: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984 2385

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monly reported side effects which usually resolve with several weeks of therapy include headache and nasal congestion. Because bromocriptine is used in patients with hyperprolactinemia who are desirous of pregnancy, the teratogenicity of the drug has been extensively investigated. Turkalj *et al* have reported the outcome of over 1,400 pregnancies and found no associated increased risks to the fetus and a spontaneous abortion rate similar to that seen in the normal population.[13]

The long-term effects of bromocriptine therapy are unknown. Bromocriptine has only been in clinical use for 14 years outside the United States and for 7 years within the U.S. The cost of the medication can be substantial at high doses. A daily dose of 5 mg daily would amount to a yearly cost of approximately $600.

Summary

Bromocriptine has been shown to be efficacious in the treatment of hyperprolactinemia with normalization of serum prolactin and restoration of fertility. It is also beneficial as a single agent or as combination therapy (with levodopa) in Parkinson's disease. — JANET A. SCHLECHTE, M.D., *Department of Internal Medicine and Clinical Research Center.*

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OUR MAN IN EDUCATION

(Continued from page 131)

letting "trivial" mean the opposite of unimportant, its commonplace meaning today. It parallels an aphorism of the famous psychotherapist Erik Erikson who said, "We can learn about *things* by doing to them, but we learn about people *(beings)* by doing with them or for them."

One aspect of my cultural deprivation is about to end, however. I recently read a Mark Twain comment, "A cauliflower is just a cabbage with a college education" and that, combined with knowing that this is the centennial year for Twain's *Huckleberry Finn*, has prompted me to end my shameful deficiency of never having read that enormously important work. By the time you read these words, I'll have watched Iowa play in the Rose Bowl and will have read *Huckleberry Finn*. But regarding the other items of popular culture in my opening paragraph, you can safely wager I'll still remain woefully deprived.

QUESTIONS AND ANSWERS

(Continued from page 99)

tives and social policy changes. Through these services we hope to show the community that adequate treatment programs must be based on a variety of approaches.

In summary, what can chemical dependency programs do to provide appropriate evaluations and adequate treatment programs?

Chemical dependency and mental health professionals must act together in a spirit of cooperation rather then competition. They must be willing to scrutinize and be scrutinized.

There should be more patient placement research. This research determines what kind of treatment works best for different types of patients. Children deserve the very best type of treatment, closely scrutinized to determine the child's needs, not the needs of the treatment program, are being met.

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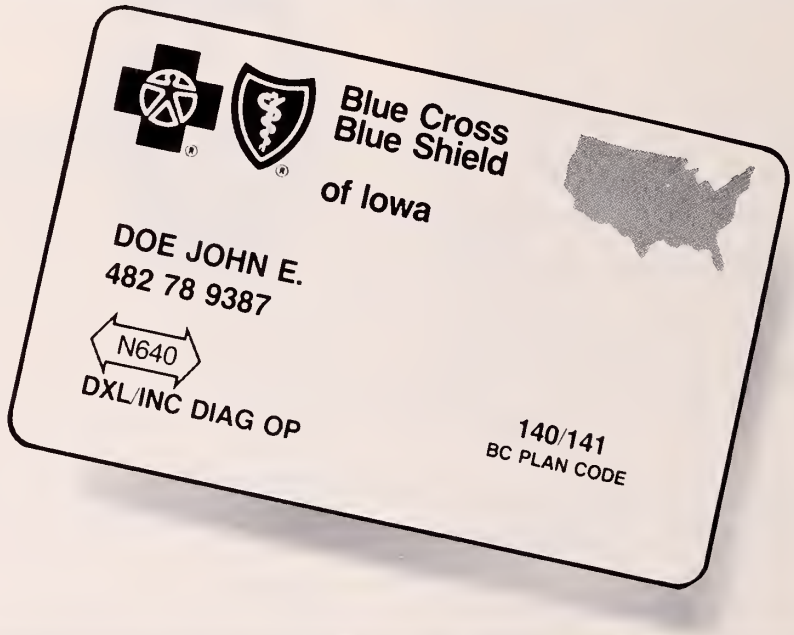
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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

UPDATE ON NEWBORN SCREENING

In response to the need for changes in the genetic health care system in Iowa, screening programs of the Birth Defects Institute (BDI) continue to evolve. After a successful pilot program, the Maternal Serum Alpha-Fetoprotein Screening Program was implemented on January 8, 1986. Also, in January, a section on the management and treatment of premature and low birth weight infants with true hypothyroidism was added to the recommended Newborn Screening Program protocol.

It is estimated that approximately 20 infants born in Iowa every year will be affected with neural tube defects; the 2 major forms are anencephaly and spina bifida. Anencephaly is a lethal malformation that accounts for about one-half of all cases. The remainder are open or closed spinal lesions. The incidence of open spina bifida in Iowa is approximately 0.4 per 1,000. Most surviving cases of open spina bifida are associated with long-term disability including lower limb paralysis, sensory loss, chronic bladder or bowel problems, meningitis, hydrocephalus and mental retardation. Couples with an affected child are at an increased risk of recurrence (2 to 3%). It is important to remember that 90 to 95% of all neural tube defects occur in families with no previous history.

Emphasis from ACOG

In May of 1985, members of the American College of Obstetrics and Gynecology received an "Alert" from the College's Department of Professional Liability entitled "Professional Liability of A.F.P. Tests." The Alert stated: "It is now imperative that you investigate the availability of these tests in your area and familiarize yourself with the procedure, location and mechanism of the follow-up tests to screen for neural tube defects. It is equally imperative that every prenatal patient be advised of the availability of this test and the patient's decision with respect to the test be documented in the patient's chart."

"It is important to remember that 90 to 95% of all neural tube defects occur in families with no previous history."

In Iowa, the Maternal Serum Alpha-Fetoprotein Screening Program is voluntary. The University Hygienic Laboratory is designated to perform the MS-AFP assays. The cost of this test is $30. The contact person at the University Hygienic Laboratory is Jane P. Getchell, Dr. P.H., (319/353-5990).

Unfortunately, this test fails to detect about 15% of the cases of neural tube defects. While only one to two of every 1,000 pregnant women will carry an affected fetus, about 50 will show an elevated AFP level. Because of these statistics, the need for careful counseling and expert follow-up of all women with elevated levels is essential. The Iowa system employs a multistage protocol which consists of a retest if the initial value is elevated; this is followed by an ultrasound examination if the retest is also elevated; and then followed by an amniocentesis if the ultrasound does not provide an explanation for the serially elevated values (i.e., underestimation of gestational age, multiple pregnancy).

(Please turn to page 140)

This information on public health matters is furnished and sponsored by the Iowa State Department of Health.

STATE DEPARTMENT OF HEALTH

(Continued from page 139)

Consultation Is Available

A consulting physician will be on call to respond immediately to the needs of an attending physician should questions arise at any point in the testing procedure. The consulting physician will provide the attending physician with recommendations on the specimens, need for further testing, treatment or any other questions. These questions should be directed to Roger Williamson, M.D., (319/356-4119).

The BDI will assist the attending physician by making information available on request. The informational pamphlet includes a brief description of the disorders being screened for, their genetic implications, and the method of collection of the screening specimen. For questions related to the program description call Roger Chapman, M.S.W., (515/281-6646).

The responsibility for the care and management of children suspected or known to have one of the screened disorders in the Newborn Screening Program rests with the attending physician. However, as these conditions are infrequently encountered in routine clinical practice and may require complex interdisciplinary diagnostic and management techniques, a Metabolic and Biochemical Genetic Disorders Clinic has been developed in the Department of Pediatrics at the University of Iowa. It is available to assist physicians with these problems.

New Protocol for Hypothyroidism

Since transient false positive results for hypothyroidism are common in pre-term and low birth weight infants, the distinction between false positive and true positive cases becomes a problem. To minimize the costs of follow-up on such infants, while assuring adequate care for those infants with true hypothyroidism, the following new protocol has been recommended:

1. If the filter paper T4 value is between 5 and 7 mcg/dl with a normal filter paper TSH value (<20) the test should be repeated once a month until the filter paper T4 is greater than 7 mcg/dl.
2. If the filter paper T4 value is between 3 and 5 mcg/dl and the filter paper TSH value is normal, the tests should be repeated every 14 days until the filter paper T4 is greater than 5 mcg/dl and then once a month until the filter paper T4 is greater than 7 mcg/dl.
3. If the filter paper T4 is less than 3 mcg/dl, serum T4, TSH and if possible, free T4 values should be obtained. If the serum free T4 value is normal, and/or the serum TSH value is normal, these tests should be repeated every two weeks until the filter paper T4 value is greater than 5 mcg/dl and then at monthly intervals until the filter paper T4 is greater than 7 mcg/dl.
4. Consultation with a center experienced with the management of congenital hypothyroidism is recommended for any infant with T4 levels of 5 mcg/dl or less beyond 2 months of age.

For program descriptions of the Maternal Serum Alpha-Fetoprotein Screening Program or Newborn Screening Program contact the Birth Defects Institute at 515/281-6646.

HEAD AND ASSOCIATE HEAD OF CLINICAL MEDICINE STUDENT HEALTH SERVICE READVERTISED

SDSU invites applications for Head and Associate Head of Clinical Medicine for two anticipated openings June, 1986. Licensed GP, FP or Internists, successful experience with young adult clientele and eligibility for SD licensure required. Submit resume and 3 recent letters of recommendation to Don Smith, Administrator of Student Health, 202 West Hall, Box 510, South Dakota State University, Brookings, South Dakota 57007 (605-688-4157). Deadline is April 1, 1986 or until positions are filled. South Dakota State University is an AA/EEO Employer (Female/Male).

Medical Developments

NEWS/PRODUCTS, PROGRAMS, ETC.

RECENT NATIONAL SURVEY — A recent national survey sponsored by the Hearst Corporation, New York, reveals American women are well-informed about basic nutrition and female physiology. The multi-faceted survey on "The American Woman's Knowledge of Health and Physical Well-Being," released in October was good news to the annual convention of the American Academy of Family Physicians in Anaheim, California. The report also revealed some deficiencies. A large percentage of women, for example, have a firm grasp upon the fundamentals of nutrition but are deficient in quantitative knowledge to maintain a proper diet. It is a sad note, however, that of those women who smoke about a pack of cigarettes per day, 90% are aware of the increased incidence of lung cancer deaths among smokers.

PAIN RELIEF DURING CHILDBIRTH — The American Council on Science and Health has issued a report which discusses options for pain relief during childbirth. The report indicates there is no convincing evidence that the use of pain-relieving drugs during childbirth affects the infants' long-term development. For a complimentary copy of the report entitled, "*Obstetric Anesthesia*," send a self-addressed, stamped (39¢ Postage), business-size (#10) envelope to Obstetric Anesthesia Report, ACSH, 47 Maple Street, Summit, New Jersey 07901.

TOURETTE SYNDROME — If you wish information about Tourette Syndrome, or desire to become involved in the association, write Tourette Syndrome Association, 41-02 Bell Boulevard, Bayside, New York 11361.

FREE COPY — A complimentary copy of a report on *Irradiation of Food* as a preservation technique is available from the American Council on Science and Health. Send a self-addressed, stamped (39¢ Postage), business-size (#10) envelope to Irradiated Foods Report, ACSH, 47 Maple Street, Summit, New Jersey 07901.

TWO NEW TESTS — Wampole Laboratories, division of Carter-Wallace, Inc., recently released 2 new products of current interest. VIROGEN® ROTATEST™ is a rapid latex agglutination slide test for qualitative detection of rotavirus in fecal samples. Results can be had in 17 minutes. BACTIGEN™ Group A Streptococcus test is another rapid (7 minutes) latex agglutination slide test. Clinical accuracy of 97.4% is claimed. Further information can be had from local distributors or Wampole Laboratory representatives (1-800-257-9525.)

SPECIAL AWARD — Hoffman-LaRoche Inc. received a special award from the Department of Health and Human Services for outstanding work in developing and marketing orphan drugs (drugs designed to treat exceptionally rare diseases). Between 1970 and 1980, Roche Laboratories developed and marketed Solatene (for erythropoietic protoporphyria), Ancobon (antifungal), Clonopin (anticonvulsant), FUDR (for inoperable liver cancer), Nipride (anti-hypertensive) and Rocaltrol (end product of vitamin D).

RAPID HERPES TEST — Virogen® Herpes Slide test was introduced by Wampole Laboratories in December for detection of herpes simplex virus in 30 minutes. Such a test should have its greatest impact in avoiding neonatal herpes infection through prenatal maternal detection.

NEW DRUG FOR HYPERTENSION — TENORETIC® (Stuart Laboratories) is combination of a beta blocker and a diuretic for treatment of hypertension. It is claimed this drug controls the blood pressure in 86% of patients with 90% freedom from side effects.

January 1986 Morbidity Report

Disease	Jon. 1986 Total	1986 to Date	1985 to date	Most Jon. Coses Reported From These Counties
Aids	1	1	1	
Amebiosis	3	3	1	Johnson, Story
Brucellosis	0	0	0	
Chickenpox	1257	1257	907	Scottered
Compylobocter	15	15	5	Scottered
Cytomegolovirus	4	4	0	Block Howk, Boone, Pocohontos
Eotons Agent Infection	0	0	5	
Encepholitis, virol	0	0	3	
Erythemo Infectiosum	0	0	0	
Gostroenteritis (GIV)	2366	2366	1481	Scottered
Giordiosis	40	40	26	Scottered
Hepotitis, A	6	6	1	Scottered
Hepotitis, B	5	5	7	Scottered
Hepotitis, Non A-B	0	0	0	
Hepotitis type unspecified	0	0	1	
Herpes Simplex	115	115	69	Scottered
Herpes Zoster	0	0	0	
Histoplosmosis	2	2	0	Dubuque, Polk
Infectious mononucleosis	34	34	10	Scottered
Influenzo, lob confirmed	17	17	8	Scottered
Influenzo-like illness (URI)	6948	6948	2517	Scottered
Legionellosis	3	3	1	Johnson, Polk, Woodbury
Molorio	0	0	0	
Meningitis oseptic	1	1	5	Woshington
bocteriol	0	0	18	Scottered
meningococcol	4	4	2	Cerro Gordo, Linn, Polk
Mumps	4	4	1	Block Hawk, Butler, Linn, Woyne
Pertussis	2	2	0	Lyon, Polk
Robies in onimols	11	11	16	Scottered
Reye Syndrome	0	0	1	
Rheumotic Fever	0	0	0	
Rubello (Germon meosles)	0	0	0	
Meosles	0	0	0	
Solmonellosis	18	18	9	Scottered
Shigellosis	1	1	1	Muscotine
Toxic Shock Syndrome	3	3	1	Johnson, Linn, Morion
Tuberculosis totol ill	2	2	10	Polk, Woodbury
boct. pos.	2	2	9	Polk, Woodbury
Typhoid Fever	1	1	0	Johnson
Venereol diseoses:				
Gonorrheo	394	394	340	Scottered
Chlomydio	266	266	0	Scottered
Syphilis	3	3	0	Dubuque, Woodbury

Other Non-Reportoble Diseoses: Clonorchis — 2, Linn; Lyme Diseose — 1, Butler; Rotavirus — 1, Davis; Trichurius Trichurio — 1, Linn; Ureoplosmo Ureolyticum — 2, Johnson, 1 Scott, 1 Wopello.

RECENT BOOKS

The Parents Emergency Guide, 1984, Facts on File Publications, New York, N. Y., Paperback, $6.95. This small action handbook provides a quick reference on childhood illnesses and accidents. The descriptions are brief and concise. Line drawings add to the value of this little publication.

Schein, Jerome D., 1984, *Speaking the Language of Sign: The Art and Science of Signing*, Doubleday and Company, Inc., Garden City, N. Y., Paperback, $9.95. This is a fantastic book. It helps to understand this very expressive manner of communication. It will serve as an excellent reference book to those who have chosen to learn to sign. Though the illustrations are helpful, personal instruction would be mandatory. This book has stimulated me to learn more of this method of communication.

Nelson, Barbara J., 1984, *Making An Issue of Child Abuse: Political Agenda Setting for Social Problems*, University of Chicago Press, Chicago, Illinois, $17.50. Three areas are discussed. First, there is a review of the history of child abuse policy-making since 1955, second, a general discussion of the political agenda setting of the problems, and third, what the author chooses to call "the public use of private deviance."

Thompson, D. S., M.D., editor, 1985, *Every Woman's Health*, Doubleday & Co., New York, N. Y., $19.95. Health maintenance and understanding of principles of health care are emphasized in this book. Well-written for easy comprehension, the subject matter is presented in a well-organized manner. Approximately one-third of the volume consists of an encyclopedia of health and medical terms.

Powell, Walter W., 1985, *Getting Into Print: The Decision-Making Process in Scholarly Publishing*, University of Chicago Press, Chicago, Illinois, $19.95. This is a comprehensive evaluation of the book-publishing business . . . how books are published, how to get books published, and the workings of the editorial process.

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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Jack N. Morgan, Fairfield, has retired from medical practice. Dr. Morgan received the M.D. degree at Washington University School of Medicine in St. Louis, Missouri; interned at Minneapolis General Hospital and completed his family practice residency at Robert B. Greene Hospital in San Antonio, Texas. He began medical practice in Fairfield in 1953. Dr. Morgan is an 18-year member of the American Heart Association Council on Clinical Cardiology and charter fellow member of the American Academy of Family Physicians. . . . St. Luke's Health Care Foundation has presented its sixth Founders Award to **Dr. Campbell F. Watts,** retired Cedar Rapids general surgeon. Dr. Watts received the M.D. degree at the University of Minnesota and served his surgery residency at the Mayo Clinic in Rochester, Minnesota. He is a past president of the Linn County Medical Society; past president of the Iowa Clinical Surgical Society and past president of the medical staff at both St. Luke's and Mercy hospitals. He retired in 1984. . . . **Dr. James L. Knott,** Council Bluffs, was honored by Mercy Hospital for 25 years as an active member of Mercy's medical staff, including serving as chief of staff in 1983. Dr. Knott received the M.D. degree at Creighton University in Omaha; interned at St. Joseph-Mercy Hospital in Sioux City and served his internal medicine residency at Veterans Administration Hospital in Omaha.

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CARDIOLOGY FELLOWSHIP PROGRAM — APRIL 10-11, 1986

The Cardiology Fellowship, to be held at the Holling Center on April 10-11, 1986, is a two day intensive program for primary care physicians. The program is designed to enhance diagnostic, treatment and follow-up skills in caring for the cardiac patient. Continuing Medical Education (CME) credits are offered for participation in the program.

Spouses are invited to participate in special activities; participants and faculty will enjoy an evening of elegant "dining out" together on Thursday, April 10. Participants are housed at the Immanuel Plaza Motel on the Medical Center campus.

First Day

Differential Diagnosis of Chest Pain
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Electrocardiography
Richard E. Collins, M.D.
Treadmill Testing
Steven J. Diamantis, M.D.
Current Therapy for Angina Pectoris
Michael M. Dehning, M.D.
Percutaneous Transluminal Coronary Angioplasty
Richard E. Collins, M.D.
Cholesterol and Coronary Artery Disease
Joseph M. Rapoport, M.D.
Coronary Bypass Surgery
David A. Hughes, M.D.
Current Methods of Myocardial Infarction Reduction
Steven J. Diamantis, M.D.
After Infarct — What Next?
Michael M. Dehning, M.D.
Case Studies
Richard E. Collins, M.D.
Michael M. Dehning, M.D.

Second Day

Bedside Exam of Cardiac Patient
Richard E. Collins, M.D.
Valvular Heart Disease
Richard E. Collins, M.D.
Echocardiography
Michael M. Dehning, M.D.
Current Therapy of Congestive Heart Failure
Steven J. Diamantis, M.D.
Pre-op Evaluation of the Cardiac Patient
Michael M. Dehning, M.D.
Stress Management
Richard E. Collins, M.D.
Approach to Sudden Death
Steven J. Diamantis, M.D.
Pacemakers
Michael M. Dehning, M.D.
Current Therapy for Hypertension
Richard E. Collins, M.D.
Future Trends
Richard E. Collins, M.D.

For more information on this or future Fellowships, contact Marion Kaple, Holling Education Center, Immanuel Medical Center, 6901 North 72nd Street, Omaha, Nebraska 68122, (402) 572-2340.

CLASSIFIED ADVERTISING

CLASSIFIED ADVERTISING RATE — $2 per line, $20 minimum per insertion. NO CHARGE TO MEMBERS OF IOWA MEDICAL SOCIETY. Copy deadline — 1st of the month preceding publication.

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FELLOWSHIP OPPORTUNITY — Two-year clinical adolescent medicine fellowship will be offered at the Raymond Blank Memorial Hospital for Children (Iowa Methodist Medical Center), starting in July, 1986. The core of the training will be centered around an innovative inpatient adolescent behavioral medicine service. Additional areas of training include sports medicine, gynecology, endocrinology and hospital administration. The fellow must be a graduate of an approved residency program (pediatrics, family practice, or internal medicine). The purpose of this fellowship is to prepare qualified individuals for a career in the stimulating field of clinical adolescent medicine. Interested candidates should contact Donald E. Greydanus, M.D., F.S.A.M., Iowa Methodist Medical Center, 1200 Pleasant, Des Moines, Iowa 50308. 515/283-6230

GENERAL SURGEON, OB/GYN and INTERNAL MEDICINE SPECIALISTS — To join seven-doctor family practice clinic in Cloquet, Minnesota, a community of 12,000 (30,000 service area) located 20 minutes from Duluth-Superior. Clinic facility is located one block from modern, well equipped 77-bed hospital. Cloquet enjoys a stable economy (forest products). Additionally, our community is noted for its excellent school system. First year salary guarantee, paid malpractice, health and disability insurance, vacation and study time. Contact John Turonie, Administrator, Raiter Clinic, Ltd., 417 Skyline Blvd., Cloquet, Minnesota 55720. Telephone 218/879-1271.

WANTED — BOARD CERTIFIED GENERAL SURGEON — To join incorporated northern Iowa group of seven physicians to replace retiring surgeon. Target date is July 1986. Would work with present surgeon for 1 year and then take over the surgery practice. Experience in orthopedics and OB-GYN surgery desirable. Contact Tom Place, M.D. or Mark Steine, M.D., Osage Medical Group, Osage, Iowa 50461. Call 515/732-3753.

CARDIOLOGIST — Excellent opportunity for a Board Certified or Eligible Cardiologist to associate with a progressive Cardiology Group in North Central Wisconsin. Modern single community hospital offering all varieties of comprehensive Cardiology and Cardiovascular/Thoracic Surgery Services. Position available now. If interested, send CV or contact D. Joe Freeman, M.D., FACC, North Central Heart Clinic, 425 Pine Ridge Blvd., Suite 204, Wausau, Wisconsin 54401. Call 715/845-NCHC (6242).

GENERAL INTERNIST WANTED — Medical Associates Clinic, 22-physician multispecialty group practice in eastern Iowa, has an opening for a general internist. Board certified or eligible. Competitive salary and comprehensive benefits. Excellent school system. Ideal family living. Call collect 319/243-2511 or send curriculum vitae with names of references to Roger Greenwald, Administrator, Springdale Drive & 13th Avenue North, Clinton, Iowa 52732.

WANTED — E. R. PHYSICIANS — STAT, P.C., a professional corporation providing St. Joseph Mercy Hospital Emergency Department physician services, looking for qualified part-time or full-time physicians to staff the emergency department. Please direct inquiries to Lambert C. Orton, M.D., STAT, P.C., 84 Beaumont Drive, Mason City, Iowa 50401. 515/424-STAT (7828).

BOARD-CERTIFIED INTERNIST — With current ACLS/ATLS, available for office, clinic, urgent care, in-hospital coverage on weekends and weekdays after 4 p.m. Contact Dr. Dee at 319/334-6663 or write: NO. 1564, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265.

FAMILY PRACTICE — For sale in southeast Iowa. Physician retiring, may be purchased for a small fee. Includes medical equipment. For further information write No. 1566, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265.

PSYCHIATRIST WANTED — To establish practice in southeast Iowa. Excellent facilities available. For further information write No. 1567, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265.

MEDICAL BILLING — We offer professional practice management services for a profitable practice through our computerized Service Bureau Operation. Accounts receivable, accounts payable, bookkeeping, payroll, or inventory control. Progressive, Iowa-based physician owned with data capture and electronic claims capabilities. Contact Dwight Hughes, Professional Management Systems, Waterloo, Iowa 50701. 319/232-6000.

INTERNIST OR FAMILY PRACTITIONER WANTED — To join small multispecialty clinic in southeast Iowa. Community of 6,500; drawing area 20,000; 50-bed hospital. Reply to Donald K. Miller, M.D., Washington Medical Clinic, Washington, Iowa 52353. 319/653-6601.

INTERNIST WANTED — To associate with 5 family physicians, and one surgeon. Rural central Wisconsin resort community. Well-equipped 40-bed hospital with new ICU. Total referral source 14 physicians. Contact J. R. Salan, M.D., 710 Riverside Drive, Waupaca, Wisconsin 54981. 715/258-1154.

CARDIOLOGIST (INVASIVE) — To join two invasive cardiologists in eastern Iowa. All treatment modalities available. Write No. 1563, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265.

LOCUM TENENS NEEDED — MARCH 10-22, 1986 — Must attend 2 weeks active duty Army. Solo practice, OB and hospital practice optional. Located in N.E. Iowa on the Mississippi. Call or write for details: Dale Wicklund, M.D., Box 680, 50 N. 4th Street, Lansing, Iowa 52151 319/538-4135 or 319/538-4932 (Home).

FOR SALE — 6-TIER "CENTRAC" FILING SYSTEM — Movable, round tiers provide easy access to all personnel. In EXCELLENT condition, will sell at reasonable price. Call or write: Marshalltown Family Physicians, 112 East Linn, Marshalltown, Iowa 50158 (Attention: Diane Dvorak, Office Manager) 515/752-5469.

WANTED — 1 OR 2 PHYSICIANS — For active family practice. 30-bed hospital, good coverage, excellent recreational, cultural and Big 8 sports activities. Contact: Robert H. Heise, M.D., 527 Grand Avenue, Story City, Iowa 50248. 515/733-4545.

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ORTHOPEDIC SURGEON NEEDED — Excellent practice opportunity available for orthopedic surgeon in association with 2 board certified general surgeons in northwest Iowa. Modern, expanding hospital facilities in growth-oriented communities. Excellent financial and benefit package. Contact J. Dwight Gray, Administrator, Floyd Valley Hospital, Le Mars, Iowa 51031. Call 712/546-7871.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Mary's New Playground

For Mary, alcohol and drugs were a magic panacea. They shielded her from the pain of her parents' divorce, her fear of having no friends and her lack of self-confidence.

"When I was using, I didn't have to think about anything," she says. "I didn't have to feel hurt or any sense of responsibility."

Mary was 13 and living with her mother in a Des Moines suburb when she began drinking "just on weekends."

"The first time I took that drink, something was there," she relates. "It didn't take me long to go on to other drugs. It went real fast. "

Soon, getting high became a way of life.

"I smoked grass 3 times a day, I took speed twice a day and I used cocaine. I used whatever drug was around."

Drugs were not hard to get. For 6 months, Mary had a part time job and spent her entire earnings — $800 — on drugs.

"I had a lot of friends, too, new ones. With the guys, all I had to do was smile and they'd get me high," she recalls.

When Mary looks at herself in retrospect, she sees a girl 20 pounds underweight with plummeting grades, perpetually bloodshot eyes and blotchy skin.

"I never ate. Everybody knows if you eat it takes away the effect of the drugs. I just didn't look healthy, but at the time I didn't notice. I looked in the mirror and thought I looked fine."

But Mary's mother noticed something was wrong. Over a period of several months, she took her daughter to 4 psychologists.

"I cleaned up my attitude and conned all of them," Mary says.

At age 15, Mary was expelled from school and thrown out of her mother's house.

"I went to live with my dad. He used, too, so everything was great for awhile," she says.

Mary's tragic rollercoaster ride halted when a friend went through *Our Primary Purpose*, an adolescent drug abuse program at Lutheran Hospital in Des Moines.

"I saw how she'd changed. She was laughing and her eyes sparkled. That was all I'd ever wanted — to be happy."

Mary called OPP and spent 60 days as an in-patient in the program, which is directed by a child psychiatrist and staffed by Lutheran nurses and resident physicians.

Now 16, Mary has been straight "for 16 months this Wednesday." She's graduating early and maintains a 3.0 grade average. She has new friends and new interests and shuns parties because "they're just not fun."

"You have to change playmates and playgrounds," she explains. "I know that, for the rest of my life, if I take a drink or another drug I won't be able to stop."

Another part of Mary's *Life After Drugs* is talking to groups of school children and teachers about her addiction and recovery.

"I'm busy, I'm happy, I'm always on the run and I thank God for it," she concludes proudly.

March 1986

Iowa Medicine

EXCERPTS FROM A SYMPOSIUM
"THE TREATMENT OF SLEEP DISORDERS"[8]

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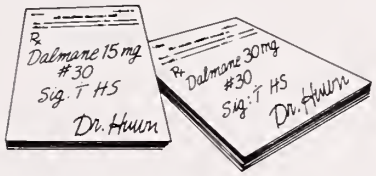
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Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

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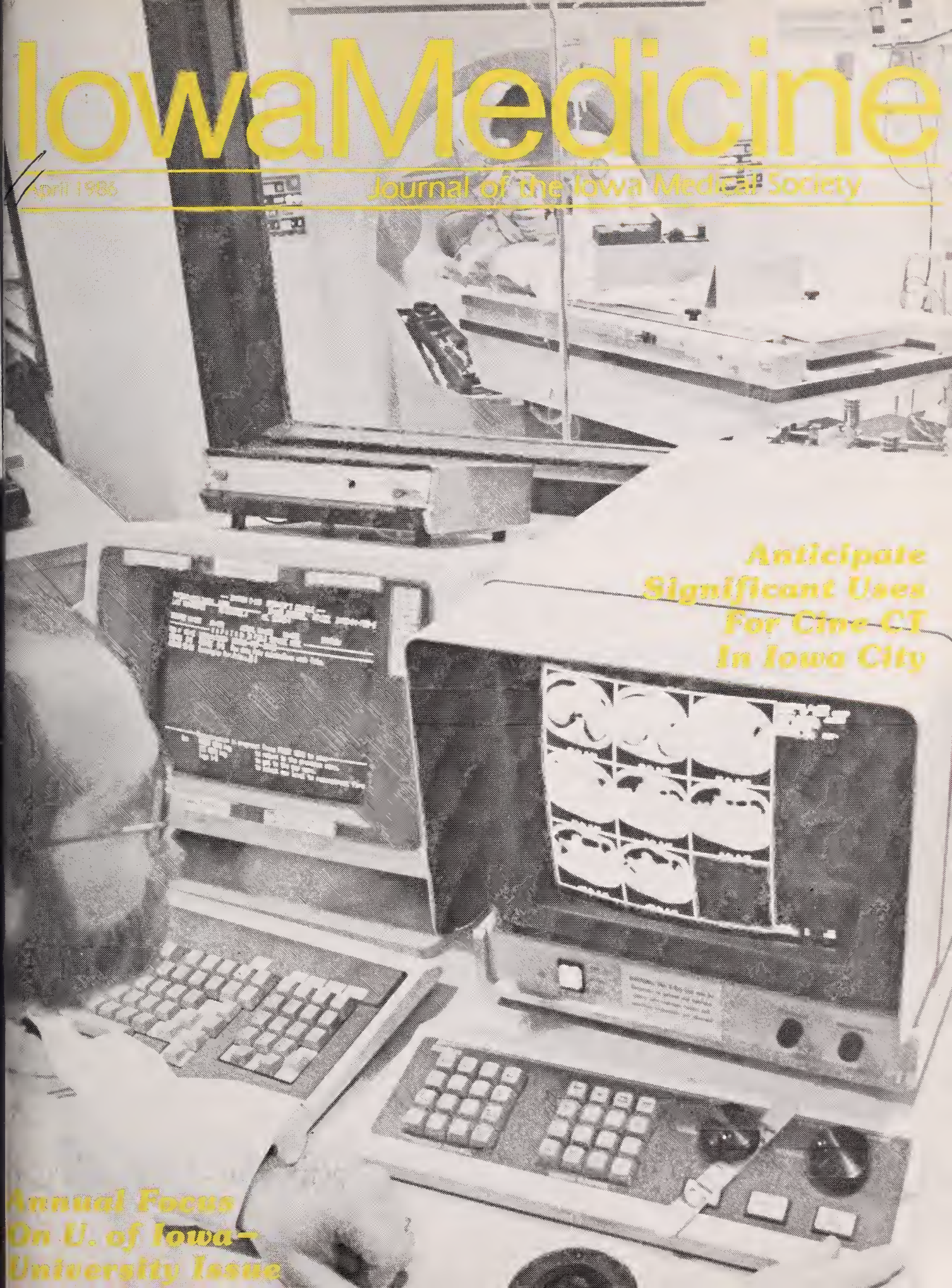
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ABOUT THE COVER — The cine CT on the cover, acquired by University Hospitals in 1984, represents the state-of-the-art in whole body scanners. Pediatric radiologist Edward Frey uses cine CT to evaluate a child's airway. Producing 17 X-ray images a second, the cine CT can freeze motion or make a movie to evaluate organs. UI physicians say the cine CT has created endless possibilities for diagnostic imaging. Cover photo: Steve Moon.

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-8709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: $15 per year. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

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(CARDIOLOGY)
UNIVERSITY OF SOUTH CAROLINA
CHARLESTON, SOUTH CAROLINA

JAMES VICK, PH.D.
U.S. FOOD AND DRUG LABS
LAUREL, MARYLAND

TOPICS:

"THE USE OF RADIONUCLIDES IN CARDIAC DIAGNOSIS"

"SUDDEN CARDIAC DEATH"

"CARDIAC VALVULAR DISEASE"

"MANAGEMENT OF INTRACTABLE CONGESTIVE HEART FAILURE"

"MODERN MANAGEMENT OF ANGINA PECTORIS: FOCUS ON SILENT ISCHEMIA"

"CALCIUM CHANNEL BLOCKERS"

A.M.A. Approved for 6 hours Catetory I of the Physicians' Recognition Award of the American Medical Association

Nursing CEU's: 0.6 (6 contact hours)

Other CME accreditations are pending.

Physician Fee	$50.00
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Paramedical Fee	$20.00
Complimentary	Residents, Interns & Medical Students

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CONTACT: DEPARTMENT OF MEDICAL EDUCATION
MERCY HOSPITAL MEDICAL CENTER
SIXTH AND UNIVERSITY
DES MOINES, IOWA 50314
(515) 247-3042

PRESIDENT'S PRIVILEGE



LOOKING BACK, LOOKING AHEAD

On the Iowa Medical Society annual calendar, April is a significant month.

In the April issue we traditionally focus attention on the University of Iowa. This month you will find articles on the medical and technological advancements at the UI College of Medicine. These advancements range from innovations in medical education to significant new surgical techniques.

You will also find information about the potential for medical research underway at the University of Iowa. As Dean John W. Eckstein, M.D., stresses in his annual message, UI researchers see a bright future on many fronts.

We salute our colleagues at the University of Iowa. We derive many benefits from the work accomplished in Iowa City.

This month, we participate in the April Scientific Session and the 1986 Iowa Medical Society House of Delegates. These concurrent events are a pivotal point in our IMS year. They demonstrate the vibrancy of our state professional association.

Delegates to the 1986 House have been designated by their county societies. They will consider reports and resolutions on a variety of topics and issues.

We cannot determine our future without looking back to see how far we've come. In the past year, we have made headway in our bid for liability tort reform. However, there is much ground yet to cover. This past year also saw the first anniversary of our IMS-sponsored IPMIT/AMACO liability insurance program. First-year goals for this program were met and exceeded; new goals lie ahead.

As we look both back and forward in April, we must acknowledge the challenges and renew our commitment to the principles which have built a strong and effective Iowa Medical Society.

Emmett B. Mathiasen MD

Emmett B. Mathiasen, M.D.
President

MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS

IMMUNE SYSTEM RELATED DISEASES

MAY 28, 1986

GUEST FACULTY

LEROY GRISSING, M.D.
DIVISION OF RHEUMATOLOGY
MAYO CLINIC
ROCHESTER, MINNESOTA

JAMES R. O'DELL, M.D.
DIVISION OF RHEUMATOLOGY
UNIVERSITY OF NEBRASKA
COLLEGE OF MEDICINE
OMAHA, NEBRASKA

DAVID MAGILAVY, M.D.
DIVISION OF RHEUMATOLOGY
LA RABIDA CHILDRENS' HOSPITAL
CHICAGO, ILLINOIS

THEODORE ROONEY, D.O.
FELLOW IN RHEUMATOLOGY
UNIVERSITY OF IOWA
IOWA CITY, IOWA

TOPICS:

"SYSTEMIC LUPUS ERYTHEMATOSUS"

"OVERVIEW OF SPONDYLOARTHROPATHIES"

"PEDIATRIC RHEUMATOLOGY: EVALUATION OF THE CHILD WITH A LIMP"

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MERCY HOSPITAL MEDICAL CENTER
SIXTH AND UNIVERSITY
DES MOINES, IOWA 50314
(515) 247-3042

The Dean's Message

Biotechnology — It's Alive and Well at Iowa

JOHN W. ECKSTEIN, M.D.
Iowa City, Iowa



John W. Eckstein, M.D.

Although the word may seem to have burst on the scene quite recently, Dean John Eckstein reports biotechnology has long been part of the College of Medicine and University of Iowa educational mission. He leads off the 1986 University issue with some examples which could become very relevant to our state's economy.

IF THE ENTERTAINING 1967 film, *The Graduate*, were being made or remade today, the magic word mumbled to Dustin Hoffman by his father's business friend wouldn't be "plastics." Rather, the new college graduate would almost certainly hear, "Biotechnology — get into biotechnology!"

That word is on the lips of many Iowans this year — including some who might be hard put to define it. Political figures and business leaders echo the DES MOINES REGISTER editorial writer who recently advised in no uncertain terms: "Make biotechnology the focus of Iowa's efforts for economic growth, and do it boldly. . . . Iowa can ride the biotechnology wave, as Silicon Valley, Route 128 and the Research Triangle rode the microelectronics wave."

Whether or not that prognostication comes to pass, it is a fact our state has many valuable resources — including the College of Medicine — that provide great potential for economic growth through development of new knowledge and devices that enhance the quality of life for everyone.

Important Work in Progress

While it is hardly news to graduates of The University of Iowa College of Medicine, we believe it necessary to call public attention to a fact apparently unknown or forgotten by those scurrying to get this state into biotechnology:

Very important work in biotechnology is being done right now and has been done for many years at The University of Iowa — especially in the College of Medicine.

Consider just 3 of the many research efforts being pursued on this campus in molecular biology. Think of their potential in terms of

human life — including the possibilities for new products and processes that would translate directly into employment.

University of Iowa pharmacologists are at the cutting edge of research with their study of a gonadotropin-releasing hormone, GnRH, that controls production of sex hormones in the body. Dr. P. Michael Conn, professor and head of pharmacology, envisions future use for this hormone as a contraceptive for both sexes. He also sees it as providing potentially effective treatment for some medical conditions, including infertility, breast and prostate cancer.

New Care Approaches

Using monoclonal antibodies as their principal tool, Dr. Richard Lynch and his colleagues in pathology seek new approaches to cancer treatment through immunologic methods, and new means of obtaining rapid diagnosis of such disorders as herpes and rabies. Monoclonal antibodies may have the capacity to carry drugs, isotopes or other toxins directly to "hit" some cancerous cells in the body and spare the healthy cells.

Long beloved by science fiction writers, genetic engineering is very much a reality at Iowa. Professor John Donelson and his colleagues in biochemistry are cloning segments of genetic substances from living organisms — animal, plant, bacteria or virus. Besides their research toward eliminating an African variety of sleeping sickness, trypanosomiasis, the Donelson research team is studying the mechanism of genes, seeking to learn how the genetic information of the cells is regulated under normal conditions of the immune system.

Cross the Iowa River and climb the hill to Professor David Soll's biology laboratory in the UI College of Liberal Arts. There he, his students and collaborators from microbiology, biochemistry, pathology, obstetrics and gynecology, dermatology and the College of Dentistry are pursuing that elusive and evasive yeast, *Candida albicans*. Besides seeking to create a kit for ready diagnosis of the various forms of the yeast, Professor Soll and his colleagues hope to develop new genetically-engineered agents that could counteract the effects of *Candida*.

Practical Outcomes Achieved

Other practical outcomes resulting from biotechnological research in the Iowa Department



When completed and put in aperatian in 1988, the Human Biology Research Facility (center) will keep Iawa in the vanguard af new knawledge in malecular biology, immunology and genetic engineering. The 5-stary structure is flonked by the Steindler Building (formerly Children's Hospital) at tap left af madel, Bawen Science Building (top), Medical Laborotories (right center) and Medical Reseorch (center lawer right).

of Orthopedics include the "little black box" that measures nerve conduction, now being manufactured in Cedar Rapids and Iowa City, and the famous "Iowa Knee Brace" worn by football teams throughout the country.

Though it may sound more like a project for an agricultural experiment station, Professor Charles Cox and his colleagues in microbiology and chemical engineering are studying the corn wet-milling industry. They are looking for a bacterium that will speed the initial soaking phase of the corn-refining process, and hence provide for maximum yields of starch and corn protein. Such yields could lead to development of new and improved uses of the products and ultimately increase the profit potential of the industry.

These are but a few illustrations of important work in biotechnology in the College of Medicine, where many of our facilities, techniques and staff lend themselves easily to solving problems in human biology and agriculture. This capability will multiply within the next 2 years when the College of Medicine completes and opens the new 5-story Human Biology Research Facility now under construction immediately north of the Medical Laboratories.



Site of the new UI Human Biology Research Facility, under construction immediately north of the Medical Laboratories.

Starting Base is Here

Thus the REGISTER quite properly editorialized, "Iowa has the base from which to start. The earliest applications of the new biotechnology will be in fields such as agriculture, medicine, pharmacy, veterinary medicine, food processing — fields in which Iowa universities excel. A few private companies in Iowa are already involved in biotech."

Having had considerable first-hand experience at recruiting top-notch biotechnologists and other scientists in these years of shrinking support for research, we will go to the line for the editorialist's final piece of advice:

"If 10 chairs were endowed every year, after 10 years there would be 100 endowed chairs — 100 of the best brains in biotechnology and related fields working in Iowa, sparking ideas and products for Iowa companies, attracting thousands of bright students to Iowa, spawning new companies and creating jobs to make products not yet imagined.

"It's an exciting vision, well suited to Iowa's people and resources. All that's needed is the boldness to embrace it."

Building On The Past

Many of Iowa's present strengths had their roots in the boldness of earlier leadership — such as the Regents and legislators of the 1920s, who agreed Iowa would match a proffered Rockefeller Foundation grant and thus brought today's University Hospitals and Clinics into being. Other boldness was shown by those whose votes for the Haskell-Klaus and Perkins Acts provided the "critical mass" of patients needed to develop a major medical school in a relatively underpopulated state. This boldness also gave Iowa an outstanding indigent care program that put us far ahead of other states for many years.

Given the boldness to capitalize on the existing strengths of its research universities, Iowa could once again find itself in a leadership role — this time in biotechnology, truly a major hope of the 21st century.

Cine CT Today Only 'Tip of the Iceberg'

The University of Iowa was one of 5 institutions to obtain cine CT in 1984. Speed of cine CT reduces examination time and greatly reduces a patient's X-ray exposure.

CINE COMPUTED TOMOGRAPHY (cine CT) has created so many new possibilities for diagnostic imaging that we are seeing just the "tip of the iceberg" from the use standpoint. This is the observation of a radiologist at the University of Iowa Hospitals and Clinics.

Producing 17 x-ray images a second, the cine or "fast" CT can freeze motion (like a camera freezing subject motion) or make a movie to evaluate organs such as the heart, kidney, liver, as well as structures such as the aorta and airway, says William Stanford, M.D., UI assistant professor of radiology.

"The cine CT is an important addition to diagnostic imaging, because in many situations it can yield new information previously not obtainable or yield comparable information faster," Dr. Stanford says, "and because the cine CT freezes motion, it is especially good for use with children and other patients who have difficulty holding still during examination."

Cine CT Applications

The cine CT is used to evaluate congenital heart defects, airway anomalies and swallowing and speech difficulties in children.

For adult cardiology, the cine CT is used to determine patency and blood flow in coronary artery bypass grafts, currently being done with 95% accuracy. In post-heart attack patients, the cine CT can evaluate heart muscle contraction, ejection fractions, and heart wall mass. Cine CT can also detect heart valve regurgitation and aortic aneurysms or dissections.

Pulmonary uses are to evaluate pulmonary emboli, pulmonary arteriovenous fistulae, and periaortic masses. Orthopedic uses include evaluation of the patellar bone and wrist bones during movement. In sleep apnea patients, the cine CT is used to observe the tongue falling backward and occluding the airway.

Clinical researchers are planning to use the cine CT to study blood flow in the kidneys before and after lithotripsy.

In the near future, according to Dr. Stanford, the cine CT will likely be used for evaluation of renal artery stenosis and, with a new modification, blood flow in the brain.

Cine CT Efficiency

The cine CT has proven to be efficient and cost-effective for evaluating certain patients.

Because the cine CT can simultaneously scan two areas (e.g., the chest and abdomen) with one injection of contrast material, it speeds evaluation of patients with multiple injuries. For example, a 30-minute cine CT examination may replace two diagnostic procedures: an aortogram for possible ruptured aorta and a renal angiogram for possible renal artery occlusion.

For coronary bypass graft patients, the cine CT can determine patency and blood flow in grafts — possibly avoiding cardiac catheterization requiring hospitalization.

13 Years of CT Experience

University Hospitals was the fifth medical center in the nation to acquire a head CT scanner in 1973. Since then, the latest-generation whole body scanners were acquired by University Hospitals in 1976, 1981, 1983, and 1985 — with the cine CT acquired in September 1984.

The University of Iowa was one of 5 institutions to obtain cine CT in 1984. The other 4 institutions with cine CT technology are the University of California at San Francisco, the University of Illinois in Chicago, the Deborah Heart and Lung Institute in Brownsmills, New Jersey, and a group affiliated with Cedars-Sinai in Los Angeles.

Cine CT Technology

Even though the speed of conventional CT scanners has improved from 4½ minutes per image for first generation scanners in 1973 to 1.2 seconds per image for fourth generation scanners today, the cine CT is about 20 times faster as it produces 17 images per second.

Dr. Stanford explains the cine CT is faster, because it has no mechanical parts. Instead of moving the x-ray tube around the patient, the cine CT has a stationary x-ray tube that emits a stream of electrons onto large circular target rings, which generate the x-ray beam that is deflected to detectors in the gantry where the patient is lying.

The speed of cine CT reduces examination time and limits a patient's x-ray exposure to only one-tenth to one-twentieth of conventional CT exams.

Currently, conventional CT scans have better resolution than cine CT images, but Dr. Stanford indicates a modification to be made this June will enable the cine CT to produce images only 5 millimeters per slice — almost matching the resolution of conventional CT scans. The slice width of conventional CT images now is 2 to 5 millimeters, compared to 8 millimeters per slice for cine CT.

"As we become more familiar with the cine CT and assimilate the knowledge gained by this improving technology," Dr. Stanford says, "many new applications will continue to be developed. So far, we've only seen the tip of the iceberg."

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A New Perspective For UI Medical Students

FORREST MEYER
Iowa City, Iowa

University of Iowa medical students are now gaining valuable clinical experience in countries throughout the world. Whether the setting is an African village or Oxford University, these overseas programs will leave lasting impressions on the Iowa students who experience them.

FOR SOME University of Iowa medical students, a unique and memorable portion of their education takes place thousands of miles from Iowa City.

The setting may be Oxford, England, or Glasgow, Scotland, or any Third World country. It may involve watching a child die for want of an antitoxin, working in urban ghetto clinics, vaccinating children in an African village or receiving gifts from a village chief in appreciation for a health education program. Whatever the setting, the overseas experiences of these medical students leave indelible impressions.

African Experience

Senior medical student Joel Stenzel and his wife Cheryl, a UI pharmacy student, have long had an interest in mission or medical assistance work in Third World countries. Last year they spent 2 months in the western African country of Benin exploring first-hand whether such work might be a part of their future.

"After having had this experience, we definitely think that it is," Joel says. "If we're not actually personally involved, we'll certainly be supporting many of the programs there."

The Stenzels' overseas experience was sponsored by a MAP/*Reader's Digest* International Fellowship. This program provides travel grants for externships at rural mission hospitals and clinics in Third World countries. Fellowships are awarded under the auspices of MAP International, a worldwide health organization. Money for the grants comes from the estate of DeWitt Wallace, founder of *Reader's Digest* magazine.

There are many other programs through which UI medical students can study abroad. The Barry Freeman Fellowships are used frequently and offer stipends of up to $2,000 per student for clinical experience in an underserved country. Funding comes from the family of Barry Freeman, a UI medical student from Des Moines who died in 1972 during his freshman year.

Trip to Nicaragua

Senior medical students Ann Broderick and Kathy Konzen-Ohly went to Nicaragua on Barry Freeman Fellowships in the summer of 1983. They went in part to see how community participation in health care was implemented by the Sandinista government.

Forrest Meyer is associate editor for Health Center Information and Communication, University of Iowa.



Part of Bembereke, Benin, the villoge in western Africo where senior medical student, Joel Stenzel and his wife, Cheryl, o UI pharmocy student, spent 2 months late lost yeor working at the Hospitol Evangelique. The Stenzels were sponsored in part by o MAP/Reader's Digest Internotionol Fellowship.

"I was interested in seeing how Third World countries address the problem of preventive medicine and how they deal with widespread infectious disease," Broderick said. "I also wanted to see how they use auxiliary health workers to do screening techniques — blood pressure and prenatal checks, for example — which have been fairly effective in the Third World."

Broderick and Konzen-Ohly agree the insights they gained went beyond their clinical experiences and observations. "Walking from door to door for 4 to 6 hours a day gave us time to hear the unrecorded history of the neighborhood. We built friendships and saw the lifestyle of urban Managua," they wrote in a report upon their return from Nicaragua.

Written reports are required of Barry Freeman Fellows, and the tone of these reports is almost invariably enthusiastic and grateful.

Comments on Ghana

Sophomore medical student Patricia Herrera wrote of her 1985 stay in Ghana: "This summer I was fortunate enough to experience the Ghanaian way of life and work toward one of the country's current goals: improvement of health care delivery to its people. . . . We aided in this project (a health education program) by visiting the school house every week to educate children on topics such as malaria



Patricia Herrera, sophomore medical student from Chicogo, assesses the condition of a child at a clinic in Ghono, Africa. Ms. Herrera spent part of the summer of 1985 in Ghana on a Borry Freeman Fellowship. She helped youngsters learn about molorio, malnutrition ond other health-reloted topics.



At a health fair that she helped ta organize, Patricia Herrera explains a food display ta a village woman.



A yaung girl is immunized far measles and palia at a field clinic in Benin, Africa.



A malnourished infant at Haspital Evangelique in Bembereke, Benin, where seniar medical student, Jael Stenzel and his wife, Cheryl, a UI pharmacy student, spent 2 manths late last year.

and nutrition. We did this by means of songs and skits. We also organized a health fair in which we taught oral rehydration and the importance of hygiene. The village chief was so impressed by it that he later sent us 2 chickens!"

In 1984, Maria Ayala and Rosemary Delgado went to Mexico as Barry Freeman Fellows. They encountered an epidemic of brucellosis and watched with interest as the rural health clinic's staff screened and treated the affected townspeople.

"These were exciting days for us since they provided first-hand experience with the diseases we had studied in microbiology," they wrote. They also logged some personal clinical firsts: "Neither of us had seen a delivery before this time. Those we observed ranged from a traumatic forceps delivery to an uncomplicated, unexpected delivery in the hallway."

One report on a very different type of overseas experience began this way: "I would like to thank the awards committee members once again for providing me with the opportunity to study at Oxford University. It proved to be one of the most enjoyable and memorable experiences of my life." So wrote Brad Van Voorhis, the 1984 recipient of the Oxford Clerkship for junior medical students.

Initiated by Lewis January, M.D., in 1966, the 6- to 8-week clerkship is taken at the Radcliffe Infirmary, United Oxford Hospitals, Oxford University in England. One of the highest honors awarded by the College of Medicine, the clerkship can be in any specialty and carries a stipend of $2,000.

Now at Oxford

Senior Maxine Weyant, in Oxford now for the clerkship, has a strong interest in international public health. Although she has seen how health systems work in Jamaica, Mexico

and Nicaragua, she has never witnessed health care in a country that has technological advancements like those in the United States.

"I have always been interested in learning about Great Britain's rather unique system of health care delivery," she said. "I believe only by direct observation and participation within that system can I understand how it works and how effectively it meets the needs of its population."

Another educational opportunity in the United Kingdom for UI medical students is the Glasgow Fellowship for juniors or seniors interested in obstetrics and gynecology. One year the recipient goes to the Royal Infirmary in Glasgow, Scotland; the following year's winner goes to the Queen Mother's Hospital, University of Glasgow. The fellowship provides $1,000 to help defray travel expenses, while lodging is arranged at little or no cost.

The 1985 UI Glasgow Fellow was senior Lydia Jeffries, who lived with midwives in a dorm-like setting during most of her stay at the Royal Infirmary in Glasgow, Scotland. Jeffries said the experience afforded her an opportunity to see new and different approaches to the practice of obstetrics, such as routine use of midwives in normal deliveries. Jeffries also worked in clinics in some of Glasgow's poorest districts.

"The fellowship really served the purpose of getting me out of the homogeneous environment of Iowa City," she said. "Women we classify as poor or indigent here are entirely different than those so classified in a large city like Glasgow, which has a tremendously high unemployment rate."

What Americans consider to be medical necessities are considered luxuries in many of the countries visited by UI medical students.

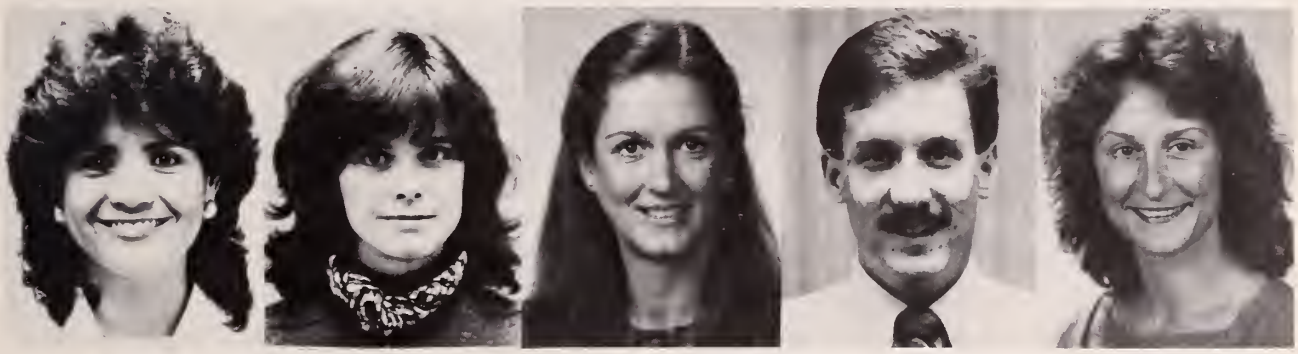
Joel Stenzel remembered one infant with diphtheria who died because there was no antitoxin available. "Things we take for granted can make such a big difference in their lives," he said, calling the incident the most saddening and distressing of his stay in Benin.

Some of his experiences were gratifying. He remembers appreciably improving the condition of children through simple oral rehydration, and helping to vaccinate 200 children one morning in a field clinic.

"These were instances where we did something very specific and concrete that we knew would make a very definite difference in the lives of those children," Stenzel said.

Because of their overseas experiences, these medical students are prepared to take up their careers with fresh and rich perspectives on life.

U. of I. Students Report on Overseas Study Experience



Maria Ayala, Junior, Anaheim, California

Ann Broderick, Senior, Iowa City, Iowa

Lydia Jeffries, Senior, West Branch, Iowa

Joel Stenzel, Senior, Burt, Iowa

Maxine Weyant, Senior, Phoenix, Arizona



Announcing . . .

ONCOLOGY FELLOWSHIP PROGRAM — MAY 8-9, 1986

A two-day continuing education program in Oncology for primary care physicians will be held at Holling Education Center, Immanuel Medical Center, May 8-9, 1986. This program is designed to enhance physicians' diagnosis, treatment and follow-up skills in dealing with the most prevalent oncology diagnosis. Continuing Medical Education (CME) credits are offered for participation in the program.

Spouses are invited to participate in special activities; participants and faculty will enjoy an evening of elegant "dining out" together on Thursday, May 8. Participants are housed at the beautiful new Immanuel Plaza Motel on the Medical Center campus.

First Day

Introduction to Cancer
John B. Davis, M.D.
Principles and Treatment of Cancer:
Radiation Oncology
Chemotherapy
David J. Harter, M.D.
Herbert A. Hartman, Jr., M.D.
Imaging Modalities
Paul Bender, M.D.*
W. Benton Copple, M.D.*
Primary Oncologic Emergencies
Anton F. Piskac, M.D.
James H. Wigton, M.D.
Colon Cancer Update
Mark Christensen, M.D.*
Alan G. Thorson, M.D.*
Tumor Markers
Thomas A. Ruma, M.D.
The Black Spot — Malignant Melanoma
John F. Latenser, M.D.
Lung Cancer Update
Leonard Moss, M.D.
The Role of the Family Physician in the Treatment of Cancer
Ronald C. Bell, M.D.
Tour of Radiation Oncology

For more information on this or future Fellowships, contact Marion Kaple, Holling Education Center, Immanuel Medical Center, 6901 North 72nd Street, Omaha, Nebraska 68122, (402)572-2340.

Second Day

Tumor Conference
John B. Davis, M.D., Moderator
Panel — Medical Staff representing Hematology, Medical Oncology, Pathology, Gynecology, Surgery, Radiology, Urology, General Family Practice, Internal Medicine
Gynecologic Tumor
Terrence J. Kolbeck, M.D.
Chronic Lymphatic Leukemia
John R. Feagler, M.D.*
Joseph D. Verdirame, M.D.*
Multiple Myeloma
John R. Feagler, M.D.*
Joseph D. Verdirame, M.D.*
Control of Pain in the Cancer Patient
David J. Harter, M.D.
Skin Tumor, Diagnosis and Treatment
John F. Latenser, M.D.
Breast Cancer Update
James R. Commers, M.D.
Thomas M. Conners, M.D.
David J. Harter, M.D.
Cancer Screening in the Physician's Office
William A. Shiffermiller, M.D.
Prostatic Carcinoma
Stewart E. Sloan, M.D.*
Gerald C. Felt, M.D.*
Liver Pumps and Hickman Catheters
Thomas Connors, M.D.
Follow-Up of Cancer Patients
Herbert A. Hartman, Jr., M.D.

* Session presenter rotates for each Fellowship Program.

New UI Cure For Writers' Cramps

CHRIS BENTLEY
Iowa City, Iowa

Written communication is a challenging proposition for physicians and everyone. A new elective class for University of Iowa medical students, faculty and staff is intended to help its participants improve their writing skills.

IMAGINE A ROOM. Imagine its details — the style of furniture it contains, whether the carpet is thick or threadbare, how the room is lighted. Record your impressions. Try to make your written description match the room in your mind.

This is the first assignment facing medical students, physicians and College of Medicine staff members in new classes taught by members of the University of Iowa Writers' Workshop.

The project is the brainchild of Workshop Director Jack Leggett. Its goal is to help eliminate the stodgy, wordy writing so often found in professional journals by introducing participants to clear, lively fiction writing techniques.

"We hope by teaching fiction we will help these students improve their professional prose," says Jane Miller, program coordinator.

Once the participants have described a room in detail, they describe a person in the room.



Members of a College of Medicine Writing Workshop discuss a student's story.

Then they add another person. Later they create a scene between the characters. Finally, they write full-fledged stories.

These elective classes are funded by a $72,304 grant from the Exxon Education Foundation. They have been underway in the UI Colleges of Medicine, Business and Law since January 1985, and in the College of Engineering since last fall. The College of Medicine classes are open to faculty and staff in addition to students.

"We thought the classes would be fun and useful for everyone, not only students," explains Richard M. Caplan, M.D., associate dean for Continuing Medical Education in the College of Medicine.

A spokesman for the Exxon Education Foundation, which will award between 1,100 and 1,200 grants worth almost $30 million this year,

Chris Bentley is enrolled in the University of Iowa Writers' Workshop and is a graduate assistant for UI Health Center Information and Communication.



Lin Enger of the University of Iowa Writers' Workshop makes a point to his students in a College of Medicine fiction writing class.

says the classes represent an idea with significant potential.

"There are programs in other schools that try to improve writing, but this is a different way to improve writing," says Exxon research director Richard Johnson. "This forces the student to step out of the kind of focused writing that he or she would normally have to do."

Jeffrey C. Murray, M.D., assistant professor in pediatrics, took the class this fall. He says it improved his writing skills even though he is already a published writer — several of his articles have appeared in medical journals. However, he says the class made him more conscious of "the science of writing."

"The class made me realize there is a lot of work and skill in writing," he says. "It's a learned skill, not just something some people are born with. To write, you need to learn to see things as they really are, and then think about how to describe them accurately. As a result, the class made me see the world in a clearer, more precise way. I found it very worthwhile and enjoyable."

Michelle Herrman, an instructor from the Writers' Workshop, believes physicians and medical students may be naturals at writing because of their trained powers of observation.

"My students have been very eager, very ready to write," she says. "They needed some guidance with their language and grammar, but their ideas and perceptions are quite clear. In fact, my classes in the College of Medicine contain some of the best students I've ever taught."

CLARKSON MEDICAL LECTURE SERIES

PULMONARY UPDATE FOR THE PRIMARY CARE PHYSICIAN

Friday, May 9, 1986
8 a.m. to 5 p.m.

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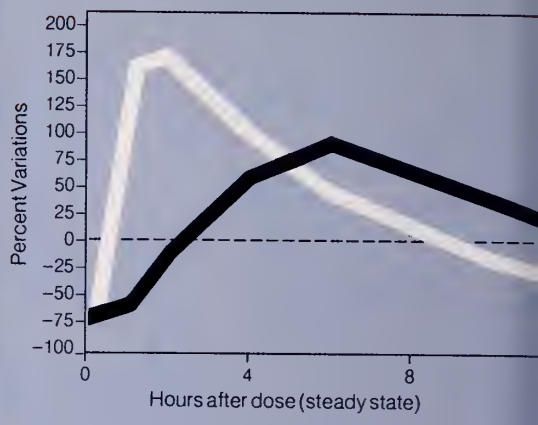
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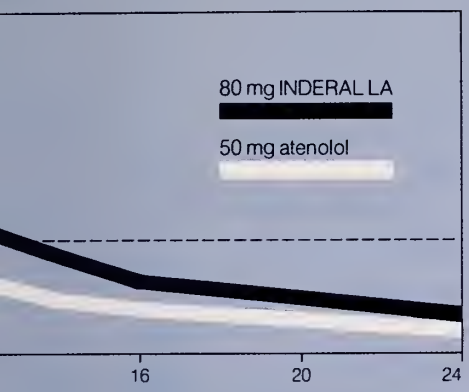
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Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL: Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs, such as reserpine should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

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NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS. Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular. Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation; mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis; erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia; LE-like reactions, psoriasiform rashes; dry eyes; male impotence; and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal: Anorexia; gastric irritation, nausea, vomiting, cramping, diarrhea, constipation; jaundice (intrahepatic cholestatic jaundice), pancreatitis; sialadenitis.

Central Nervous System: Dizziness, vertigo; paresthesias; headache; xanthopsia.

Hematologic: Leukopenia; agranulocytosis; thrombocytopenia, aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura, photosensitivity; rash; urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis); fever; respiratory distress, including pneumonitis; anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm; weakness; restlessness; transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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1. Data on file, Ayerst Laboratories. **2.** Ravid M, Lang R, Jutrin I: The relative antihypertensive potency of propranolol, oxprenolol, atenolol, and metoprolol given once daily. *Arch Intern Med* 1985;145:1321-1323. **3.** Sumiye L, Vivian AS, Frisof KB, et al: Potassium loss associated with hydrochlorothiazide versus chlorthalidone. *Clin Ther* 1981;4:308-320. **4.** Ram CVS, Garrett BN, Kaplan NM: Moderate sodium restriction and various diuretics in the treatment of hypertension. *Arch Intern Med* 1981;141:1015-1019.

5593/486

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UI Survey Explores Child Health Services

LINDA LEVEY, Ph.D.,
SAMUEL LEVEY, Ph.D. and
N. MARTIN MacDOWELL, Ph.D.
Iowa City, Iowa

Are needed health care services available to all Iowa children, regardless of economic status? Interesting results from a survey conducted by the U of I Center for Health Services Research are reported.

THE UNMET NEED for maternal and child health services was evaluated in a statewide survey conducted in 1984 by the University of Iowa Center for Health Services Research.

In this telephone survey of 1,400 Iowa households, mothers of children under age 6 were asked to grade their children's health and describe the accessibility, utilization and quality of primary health services. They were also asked about access to prenatal health services.

Linda Levey is an assistant research scientist in the Department of Pediatrics in The University of Iowa College of Medicine. Samuel Levey is head of the UI graduate program in Hospital and Health Administration and acting director of the UI Center for Health Services Research. N. Martin MacDowell was a visiting professor in the UI Hospital and Health Administration's graduate program at the time of the survey.

- *A majority of Iowa parents rate their children's health good or excellent.*
- *86% of all Iowa children under age 6 were covered by some type of insurance during 1983.*
- *About 20% of Iowa children under age 6 do not have regular yearly checkups. A majority of this group is non-poverty children.*
- *Hospital and sick-care benefits do not cover the majority of poor Iowa children.*
- *Many low income women do not seek first trimester prenatal care.*

A sample of Medicaid families with young children in the Aid to Dependent Children (ADC) program was included in the survey. Health and accessibility to health care were particular concerns here.

Interviews were completed among eligible ADC households and a sample of all households. In over 95% of the interviews, the respondent was the child's biological mother and primary caregiver.

The all-household sample was divided into families with 1983 incomes below federal poverty level (the poverty group) and families with 1983 incomes above poverty level (the non-poverty group).

Insurance As A Barometer

Health, medical, and/or hospital insurance coverage are major determinants of access to health care. On the positive side, we found 86% of

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF APRIL 1986

all children under 6 were covered by private or public insurance during 1983. In contrast, almost 7% of these Iowa children had no coverage during 1983. Another 7% had coverage for only part of the year.

Poverty group children were less likely to be covered. 59% of these children had coverage for the entire year, compared to 83% of ADC children and 92% of nonpoverty children. Predictably, Medicaid and private insurance coverage differed markedly between income groups. Significantly, 45% of the poverty children were covered by Medicaid at some time during the year.

Health status in this study was evaluated by parents, whose perceptions of their children's health may differ from that of health professionals.

About 95% of all children were judged to be in good or excellent health. About 5% (or an estimated 14,200 children) were said by their parents to be in fair or poor health. Low-income parents tended to rate the health of their children as good rather than excellent. ADC parents more often rated the health of their children as fair or poor.

Primary child health services include both preventive well-child care and acute care for illness. For both well-child and acute care, findings indicate over 94% of children in all groups had a usual source of care. Poverty children were less likely to have a usual source of acute care. In the all-household sample about 20% did not have a well-child visit in more than a year. According to American Academy of Pediatrics standards, children under 6 should have at least one visit a year. This study found that 3- and 4-year-olds were least likely to have had a well visit.

Surprisingly, nonpoverty children were *less* likely than either low-income group to have had a yearly visit in 1983. Nonpoverty households were more likely to have private health insurance, which seldom covers well visits. However, nonpoverty parents said cost was not an important factor in why their child had not had a well visit.

Acute Conditions

Poverty group parents were more likely to report their child had an acute condition in 1983 for which care was desired but not obtained. Nearly 15% did not receive desired medical care for an acute condition in 1983. Cost was the major factor for 78% of poverty children, compared to 27% of ADC and 36% of nonpoverty children.

Hospital care for illness or injury was also surveyed, excluding hospitalizations at birth and non-overnight stays. ADC children were more likely than nonpoverty children to have been hospitalized at some time. The differences between income groups for overnight hospital stays in 1983 were not statistically significant (12.8%, 13.2% and 9.6% for ADC, poverty and nonpoverty groups, respectively). No child in any group was denied recommended surgery or hospitalization in 1983 because of cost, according to the respondents.

Although financial access to primary care service was apparently not a problem for ADC children, the ADC and poverty groups generally had similar care providers. Both groups were more likely to use public clinics than nonpoverty children. However, ADC children were less dependent upon public providers than poverty children. Low-income children were less likely than nonpoverty children to have a physician or a pediatrician as their usual well-care provider.

ADC households were more likely to be urban, indicating they are closer to a variety of health care services, including specialists. The fact ADC children were less likely than nonpoverty children to have a pediatrician as their usual provider suggests some inequity in access. ADC children should have about the same financial access to pediatricians as nonpoverty children. Was the choice of provider for ADC children limited in any way by the fact that their payment source was Medicaid?

Examination By Physicians

At their most recent visits, ADC and poverty children were less likely to be examined by a physician than nonpoverty children. At well visits, poverty children were more likely than ADC children to be seen by a physician. ADC children were least likely to have been examined by a physician during well visits. However, more ADC children than poverty children had a private source.

Continuity is one indicator of health-care quality. Low-income children, regardless of

(Please turn to page 174)


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health insurance coverage, were less likely than nonpoverty children to have the same provider for well and sick care. They were less likely to be immunized at the same place as their usual source of well care. They were also less likely to see the same health professional at each visit.

Prenatal care was also covered by the survey. According to the National Center for Health Statistics, "high quality prenatal care beginning early in pregnancy holds the greatest promise for reducing racial and socioeconomic disparities in pregnancy outcome." The Iowa survey found 91.9% of mothers in the all-household sample had first-trimester care. However, there were striking disparities among income groups. 81.1% of ADC, 81.7% of poverty mothers and 94.0% of nonpoverty mothers had first-trimester care. For 1982-1983 pregnancies, low-income women fared even worse. The percentage of nonpoverty women entering care in their first trimester was virtually the same (93.6%); the corresponding percentages for ADC and poverty women were 76% and 79.4%.

Income Relative To Prenatal Care

Income group differences in prenatal care cannot be attributed solely to differences in financial resources. About 83% of both ADC and nonpoverty women had some form of public or private insurance, in contrast to 58.4% of poverty women. If ADC women had the same financial accessibility to care as nonpoverty women, why did they enter prenatal care later?

A possible explanation is that low-income women, despite Medicaid, enter care later because of physician inaccessibility. A recent report from the Iowa Commission on the Status of Women contains anecdotal evidence supporting physician inaccessibility. An informal survey of Iowa obstetricians suggests only 24% accept Medicaid patients not referred by another physician. However, few women reported difficulty in obtaining prenatal care.

The fact that 11% in the ADC group and 37.1% of the poverty group paid cash for their most recent pregnancy suggests care was postponed until after the first trimester because of financial constraints. Ignorance of eligibility for subsidized care may also have been a contributing factor.

Generally Favorable Status

The survey shows most parents grade their children's health status as good or excellent. This perception no doubt affects how much they use health services. However, health professionals often see the consequences of parental failure to recognize children's health problems. When planning health services, policymakers should consider the concerns of health professionals and parents and the demand for services. This should prevent underutilization of services while providing an adequate level of health care services for children.

The obvious method for assuring health problems do not go unrecognized and untreated is routine well-child care. A major survey finding is 1 in 5 young Iowa children had not had a regular checkup in more than a year. A possible remedy is to encourage private insurers to cover well visits. Also, physicians should emphasize to parents the importance of yearly checkups for children under age 6.

The findings indicate Medicaid and other public programs for low-income children are playing an important role in providing well-child care. The hospital and sick-care benefits to Medicaid children, however, do not cover the majority of poor children in the state.

Concerns about access to primary health services for poor children also apply to poor women, many of whom enter prenatal care later than health professionals recommend. In Iowa, subsidized prenatal care for poverty women is not uniformly available. The availability of such care depends on physician availability and accessibility, availability of Title V and local maternal health clinics, county eligibility requirements for "state papers" (the Indigent Patient Care program that funds deliveries at the University of Iowa Hospitals and Clinics to high-risk, indigent women) and Medicaid eligibility.

Medicaid paid for prenatal, delivery and postnatal care for 4,858 women in 1983 — about 56% of estimated births to poverty women and 10% of all births. Low-income women, who are at greater risk of unfavorable birth outcomes, need to know early in their pregnancies about eligibility for financial aid.

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Appreciation to Physician Preceptors

THE UNIVERSITY OF IOWA COLLEGE OF MEDICINE extends sincere appreciation to the Iowa physicians who serve in the Family Practice Preceptorship Program. Following is a list of *all* physicians who serve as preceptors for third- and fourth-year medical students. Also listed are physicians who served as preceptors to students in the Physician Assistant Program during 1984-85. The preceptorships are an important element in the College's outreach effort, as students observe first-hand a medical practice away from the academic setting.

PRECEPTORSHIP IN FAMILY PRACTICE — Approved Preceptors — January 7, 1986

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Lake City . . . . . James Comstock, Jahn Ely
Lamani . . . . . Norman Nelson
Le Mors . . . . . Daryl Doorenbos, Jomes Pawell
Lean . . . . . Larry Richord
Manchester . . . . . Mary Ann Larenz, Paul Seorles, Larry Severidt, John Tyrrell
Manilla . . . . . Jahn Hennessey
Maquaketa . . . . . Clifford Rosk
Marshalltawn . . . . . David Thomos, Milton Von Gundy
Moson City . . . . . James Caddington, Somuel Hunt, Jon Yonkey
Mt. Ayr . . . . . Duane Mitchell
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Muscatine . . . . . Forrest Deon, Mark Odell, Patrick Tronmer
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Narthwood . . . . . David Hansan
Oelwein . . . . . Robert Jaggard
Ogden . . . . . Enfred Linder
Orange City . . . . . Roy Hassebraek
Oskaloasa . . . . . Allan Petersan, Sidney Smith
Red Oak . . . . . William Artherholt
Rockford . . . . . Russell Barrett
Sac City . . . . . Radney Miller, David Yauberg

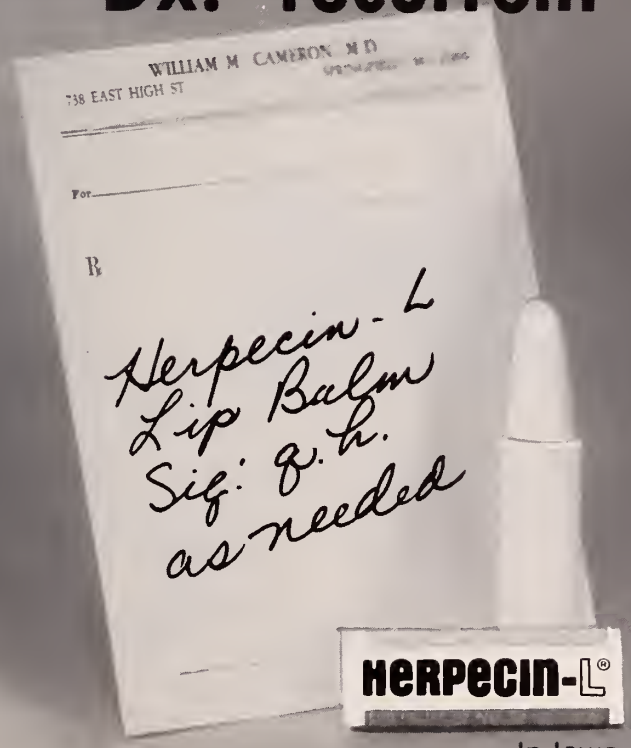
Sheldan.....Ranald Zautendam
Siaux Center.....Richard Jangewaord
Sioux City.....Gerold McGawon, John Redwine, John Raberts
Solon.....Bruce Van Hauweling
Spencer.....Geargе Fieselmonn, John Kelly, Steven Walfe
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Herschel Stoller, M.D. Center of Dermatology, P.C. Omaha, Nebraska	*"Common Dermatoses", and "Cutaneous Manifestations of Systemic Disease and Life-Threatening Dermatoses"*
J. Michael Donohue, M.D. Iowa Lakes Orthopedics, P.C. Spirit Lake, Iowa	*"Examination, Diagnosis and Treatment of Acute Shoulder and Wrist Injuries", and "Examination, Diagnosis and Treatment of Acute Knee and Ankle Injuries"*
Peter Konig, M.D., Ph.D. University of Missouri Columbia, Missouri	*"Pharmacologic Management of Chronic Asthma"*
Roger Ganfield, M.D., Ph.D. University of Nebraska Omaha, Nebraska	*"Local Anesthetics and Selected Blocks"*
John Kasik, M.D., Ph.D. U. of Iowa/VA Med. Center Iowa City, Iowa	*"T.B. and the Elderly"*

Saturday, May 3

Richard Greenberg, M.D. St. Louis University St. Louis, Missouri	*"Antibiotics Old and New: What Do I Do?", and "Urinary Tract Infections: When to Mini-Dose"*
Robert Kane, M.D. University of Minnesota Minneapolis, Minnesota	*"Assessing the Elderly", and "The Physician's Role in the Long Term Care Facility"*

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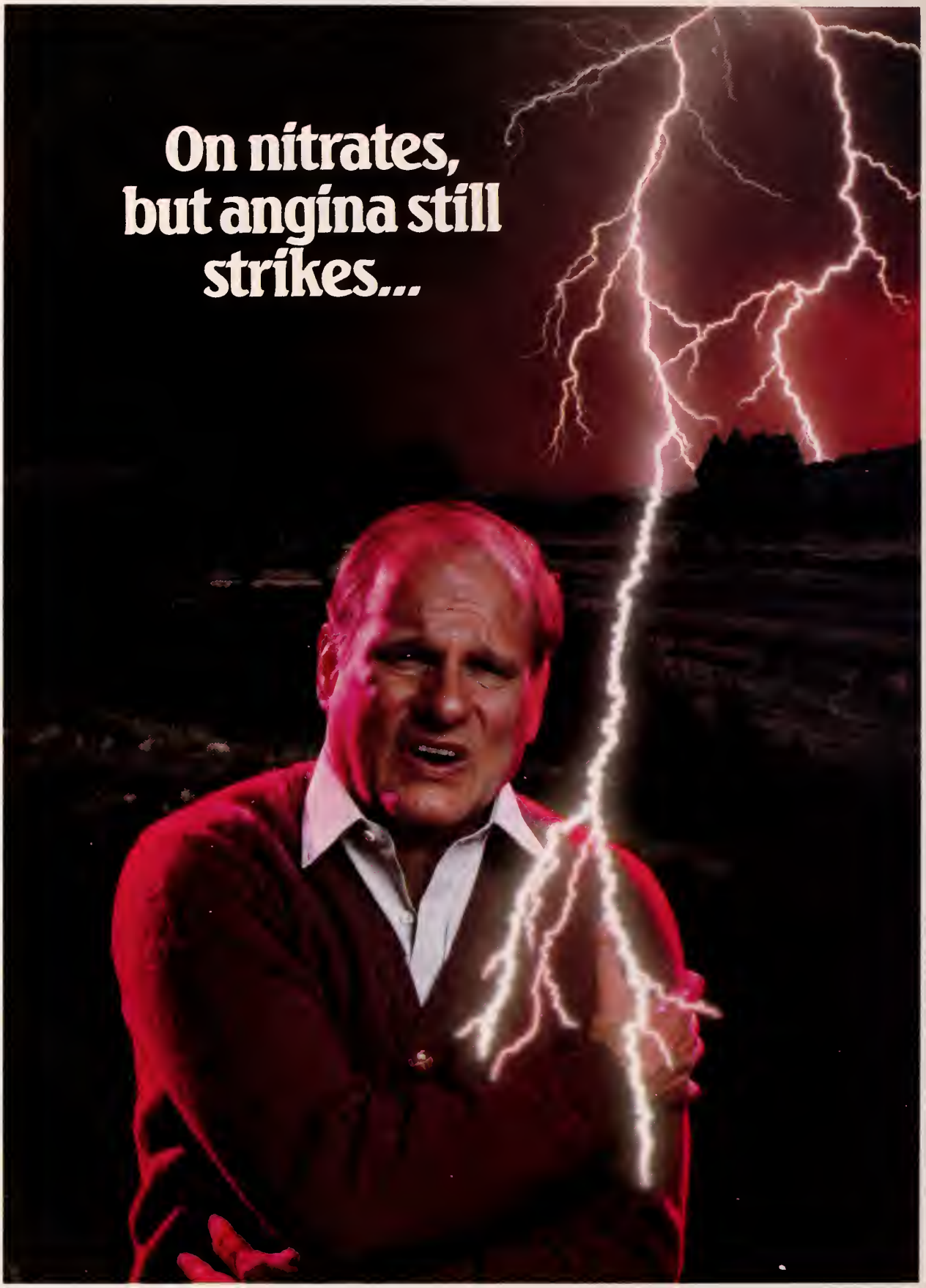
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Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category* C: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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COMMENTING EDITORIALLY



OUR UNIVERSITY ISSUE

THE PROCESS of education is without end. It is an exercise on which humankind depends for survival. Passing what we know to our successors is an absolute and shared responsibility. As physicians, we are obligated to be both learners and teachers throughout our professional careers.

Against this philosophical backdrop, we applaud those professional colleagues who serve within the formal academic environment at The University of Iowa College of Medicine. For many years we have designated IOWA MEDICINE in April as the University Issue.

On the pages of this issue you will find a panorama of commentary reflecting the breadth and depth of activity and progress in Iowa City. You will be reminded by Dean Eckstein's remarks of the strong commitment to research — and to the potential it holds for good.

The positive nature of relations between the College of Medicine and the Iowa Medical Society is testimony to the able leadership present within these major organizations — now and earlier. We acknowledge the fruits of the past; we urge a recommitment to the future of medical education — with all of its varied and major thrusts. — M.E.A.

CHARACTER

The four cornerstones of character on which the structure of this nation was built are initiative, imagination, individuality and independence. — CAPTAIN EDWARD V. RICKENBACKER

OUR COUNTRY faced yet another tragedy on January 28. Its aftermath is proving once again that Americans have character. The loss of the 7 astronauts has provided a stern test. These brave individuals demonstrated the 4 cornerstones of character expressed by Rickenbacker. The experiences of that World War II ace qualify him to speak about character and conviction.

Medicine, too, has faced some tests in recent years which have required character. New surgical approaches have brought us to life prolonging frontiers unheard of a decade or two ago. Kidney transplants, liver transplants and heart transplants, as well as artificial organs, are the product of man's unique capacity to press forward. The same pertains to new discoveries in the pharmaceutical field. Only in a society where independence is fostered can such great advances be made. The physician-researcher with imagination and initiative uses scientific knowledge to find answers and to discover new ways of caring for the sick and disabled. True, much monetary support comes from governmental sources, yet it also comes independently from private industry. How different that is from other countries where scientific and societal advances are a function of governmental instigation and control.

There are, however, some dark clouds on the horizon. We are being called upon more and more to demonstrate the *cornerstones of character*. Doing so can only make the medical profession a more viable and honorable endeavor. We hear so much of incompetent physicians, of bad apples in the barrel, and of physicians curtailing or even discontinuing their practices because of "malpractice" con-

(Please turn to page 187)

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cerns. Our professional life has become more complex because of the great influence of "third parties" involved in the business of medicine. I refer not only to the fiscal aspects of medicine but to the "advice" and mandates emanating from outside agencies (private and governmental) which have become involved in the provision of health care.

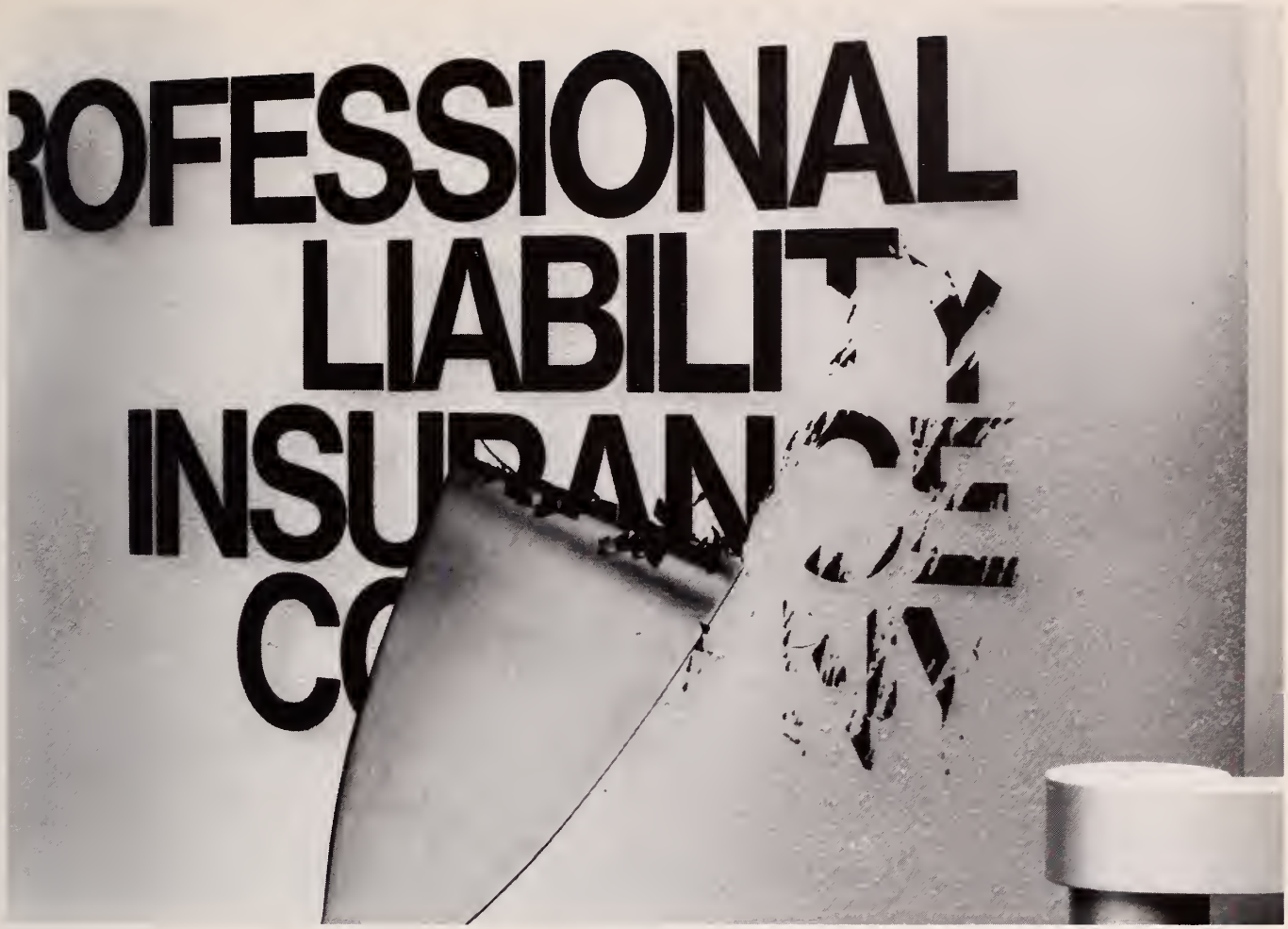
The various forms of prepaid medical care constitute a maze of confusion for patients as well as involved physicians and hospitals. To associate with this or that program — albeit a PPO, an HMO, or whatever — this is the kind of decision we have not faced since the advent of Blue Shield when becoming a participating physician was a crucial issue.

"Perhaps we need to declare a moratorium on new knowledge so we can assess and assimilate what has accumulated."

What went wrong January 28? What is wrong with society? I submit that if anything is wrong it revolves around the complexity of present day life. Most all aspects of life and our social being are so complex that computers and data banks have had to be developed to retain all the data. The stockpile of knowledge and information is so vast the human brain no longer can assimilate it. Where is all this getting us? Perhaps we need to declare a moratorium on new knowledge so we can assess and assimilate what has accumulated. Perhaps we should slow down, take life as it comes, and enjoy each day more fully.

Recently, I read a commentary on our penchant to save time. We cherish microwave ovens, digital readouts, and the fast acceleration of our automobiles. Each second seems to "count"; but, for what? What are we going to do with all the "saved" seconds?

Spring is in the offing. Wouldn't it be wonderful if one nice warm day soon we could set aside all those saved seconds and everybody take a "day off." We could just do nothing but reflect on the great things we have; how fortunate that we Americans do have character exemplified by *initiative, imagination, individuality* and *independence.* The wonders of nature in our own backyard are too valuable to be ignored or overlooked. — M.E.A.



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Recent Highlights

U. OF I. COLLEGE OF MEDICINE

THE FINAL PHASE OF A MAJOR CLINICAL STUDY OF DIABETES *is underway at the UI College of Medicine and 20 other medical centers in the United States and Canada. The Diabetes Control and Complications Trial (DCCT) is designed to determine if serious complications of diabetes can be averted by sustaining near-normal blood sugar levels in persons with insulin-dependent diabetes. The earlier phase of the DCCT completed last fall determined that it is feasible and safe for persons with diabetes to sustain near-normal blood sugar levels all the time. UI researchers are seeking volunteers with insulin-dependent diabetes to participate in the study. Interested persons can call (319) 356-4879 for more information.*

MOST LESBIAN AND BISEXUAL WOMEN SURVEYED *in a UI study said they would be more likely to tell their doctors about their sexual orientation if it didn't go on their medical records. 2,382 lesbian and bisexual women from across the nation were surveyed. About a third said they believed that disclosing their sexual orientation would "hinder" the quality of gynecological care they received. UI researchers have concluded gynecological care for lesbian and bisexual women might improve "if physicians would communicate greater awareness of sexual orientation in a non-prejudicial manner and ensure confidentiality." The survey results were published in the September issue of the* **American Journal of Public Health.**

ASSOCIATE DEAN CAROL ASCHENBRENER, *Pathology, has been appointed to a 3-year term on the Liaison Committee on Medical Education (LCME) cosponsored by the Association of American Medical Colleges and the American Medical Association Council on Medical Education. The LCME is the officially recognized accrediting body for medical education programs leading to the M.D. degree. Its primary responsibility is to attest to the educational quality of accredited programs, thereby serving the interests of the general public and the students enrolled.*

ROBERT WALLACE, *Preventive Medicine and Environmental Health, has been appointed head of the UI Department of Preventive Medicine and Environmental Health. He has been acting head of the department since July 1985. Wallace's research interests include the epidemiology of aging, predictors of breast cancer, preventive medicine, communicable disease control and the epidemiology of lipoprotein abnormalities and cardiovascular risk factors.*

AT-A-GLANCE *. . . Siroos Shirazi, Surgery, has been appointed chief of Surgery at the Veterans Administration (VA) Hospital in Iowa City. He has been associated with the UI and VA Hospital since 1972. . . . 3 UI Internal Medicine researchers have new appointments:* ***David Skorton*** *has been appointed director of the UI Department of Internal Medicine division of General Internal Medicine;* ***Robert Clark*** *has been appointed associate chairman for Academic Programs in the Internal Medicine department; and* ***Gordon Ginder*** *has been appointed associate director of the UI Department of Internal Medicine division of Hematology-Oncology. . . . UI orthopaedic researchers* ***William Blair*** *and* ***Thomas Brown*** *are recipients of the Kappa Delta Award, the highest scientific award given by the American Academy of Orthopaedic Surgeons for outstanding orthopaedic research of the year. The winning research paper is entitled "Pulsed Ultrasound Doppler Velocimetry in the Assessment of Microvascular Hemodynamics."*

This report has been compiled by The University of Iowa Health News Service.

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DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

OTITIS MEDIA IN CHILDREN: OVERVIEW OF THERAPEUTIC AND PROPHYLACTIC REGIMENS

Acute suppurative otitis media (ASOM) is the second most common diagnosis of pediatric illness made by practicing physicians. ASOM is so common that by the age of 3, two-thirds of all children have had at least 1 episode, and one-third have had 3 or more episodes. It is the most common reason for the prescription of antibiotics in the pediatric patient and accounts, directly and indirectly, for over 2 billion health care dollars spent annually in the United States. The diagnosis of ASOM is based on the objective criteria of bulging contour of the tympanic membrane, diffusion of ossicular landmarks, change in color from pearly gray to dull red or yellow, and the finding of diminished mobility on pneumatic otoscopy. Clinically, the child may present with irritability, pulling at the ears, draining ears, hearing loss, night waking, or poor feeding. Fever is over 38.2 C in 31% and under 38.2 C in 69% of children with ASOM. The symptoms of pain, tugging at the ear, or irritability may not be present in up to 20% of children with ASOM The pathogenesis of ASOM is complex; eustachian tube dysfunction is felt to be one factor that allows accumulation of middle ear fluid, which becomes secondarily infected by nasopharyngeal bacteria.[1]

Bacteriology

The bacteriology of ASOM has been studied by tympanocentesis performed during acute episodes. Sixty to 75% of acute episodes of suppurative otitis media will yield pure cultures of bacteria from middle ear fluid obtained by tympanocentesis.[2, 3] The bacteria most commonly isolated in ASOM are listed in Table 1.[4]

TABLE 1

S. pneumaniae	mean: 33%	range: 26-53%
H. influenzae	mean: 21%	range: 14-31%
Strep, Graup A	mean: 8%	range: 0.3-24%
S. aureus	mean: 2%	range: 0-3%
B. catarrhalis	mean: 3%	range: 0-8%
Gram-enterics	mean: 1%	range: 0-4%
None, ar nanpathagens	mean: 31%	range: 2-47%

Anaerobes, which had been considered as nonpathogenic in previous studies, are isolated in 15% of cases and may play a pathogenic role.

Rationale for Treatment

Antimicrobial therapy has been the mainstay of the treatment of acute suppurative otitis media; however, each case must be carefully evaluated to be certain of the otoscopic diagnosis and to avoid overuse of antimicrobials. Even when the effusion is demonstrated to be of acute (less than 3 weeks) origin, and even though 60 to 75% of patients with ASOM have

(Please turn to page 186)

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

(Continued from page 185)

bacterial pathogens isolated, many investigators still feel that antimicrobial intervention does not significantly alter the natural course of the disease. One study did not show differences in clinical course for the following 4 treatment groups: symptomatic therapy, symptomatic therapy plus myringotomy, amoxicillin alone, and amoxicillin plus myringotomy.[5] A second recent study by the same authors[6] found that treatment with analgesics alone was associated with complete recovery from ASOM in 90% of 490 children in the Netherlands. Only 3% of these children had progressive symptoms of otitis leading to alternative therapy. However, these studies and others have serious weaknesses in experimental design or sample size. Even when random treatment assignment and double-blind design are employed, outcome criteria may not depend on bacterial presence or may not be sensitive enough to detect real differences between treatment groups.

The pharmacotherapy of acute suppurative otitis media is based on the sensitivity patterns of the most commonly isolated bacteria. Although spontaneous resolutions occurred in the preantimicrobial era and do occur today, suppurative sequelae, such as mastoiditis, have been reduced dramatically following the initiation of antimicrobial therapy of ASOM. Factors supporting the continued use of antimicrobials for the treatment of ASOM are (1) the reduction in morbidity and mortality of suppurative sequelae; (2) clinical response usually within 24 to 48 hours of initiation of therapy; (3) superior outcomes in patients treated with antibiotics compared to those not receiving antibiotics in some but not all prospective studies; and (4) the knowledge that in 60 to 75% of ASOM, bacterial pathogens can be found in the middle ear.

In vitro and in vivo testing of antimicrobial therapy shows correlation with clinical response. In clinical practice, the most commonly used criteria are the resolution of the signs and symptoms of the disease, return toward normal appearance and mobility of the tympanic membrane, and the rates of relapse and recurrence.

The choice of antimicrobial agent depends on the efficacy for common pathogens in ASOM, as listed in Table 2.[4, 7]

TABLE 2

		H.influenzae B-lactamase		
antimicrobial	*S.pneumaniae*	−	+	*S.pyogenes*
Penicillin G	+	+/−	−	+
Penicillin V	+	−	−	+
Ampicillin	+	+	−	+
Amoxicillin	+	+	−	+
Cloxacillin	+	−	−	+
Cephalexin	+	−	−	+
Cefaclar	+	+	+	+
Erythromycin	+	+/−	+/−	+
Clindamycin	+	−	−	+
Sulfonomides	+/−	+	+	−
Trim-sulfo	+	+	+	−

Treatment Regimens: Two Approaches

There are several approaches to the treatment of ASOM. Until further controlled clinical trials have been conducted, there will continue to be a controversy about the optimal management.

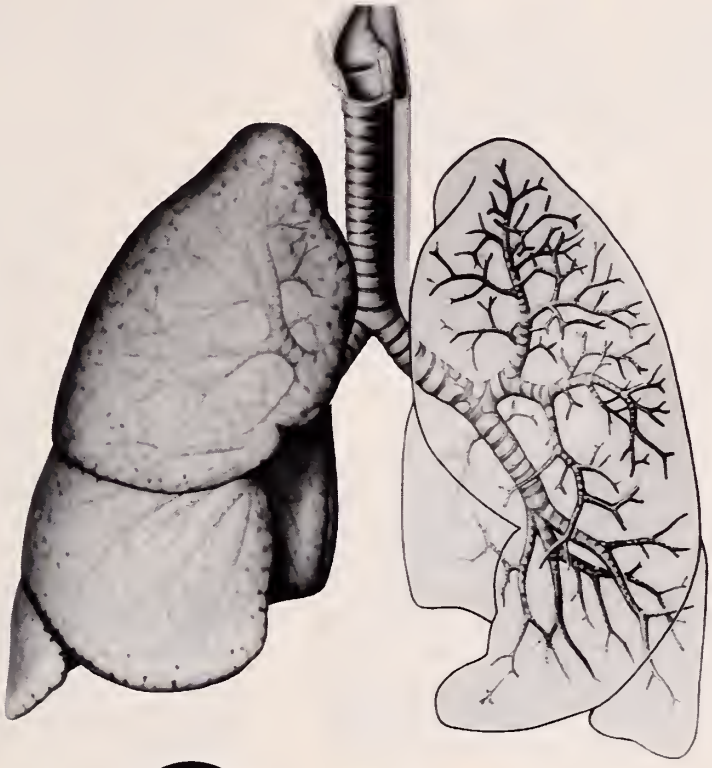
An initial conservative approach is recommended by certain authors. Analgesic treatment only based on the criteria of ASOM is recommended in a patient over one year of age, with no complications such as perforation of the tympanic membrane and no other indication for antimicrobial therapy. If there is progression of the signs and symptoms of ASOM after 2 to 3 days, then proceed to the alternative traditional approach outlined below. Often the child is observed at home for this initial 2- to 3-day period and is brought in by parents when signs and symptoms have persisted and become progressive.

An alternative traditional approach is based on the objective criteria of ASOM on physical exam and the sensitivity patterns of the most commonly isolated bacteria.

Amoxicillin 15 mg/kg every 8 hours for 10 days is the preferred therapy for ASOM. Amoxicillin produces less diarrhea than ampicillin (15% vs. 29%) and may be given without regard to meals. Amoxicillin also has the advantage of excellent bioavailability, which increases the length of time effective drug levels are detectable in the plasma. Both amoxi-

(Please turn to page 188)

Consider the causative organisms...



Ceclor®
cefaclor
250-mg Pulvules® t.i.d.

offers effectiveness against the major causes of bacterial bronchitis

H. influenzae, H. influenzae, S. pneumoniae, S. pyogenes
(ampicillin-susceptible) (ampicillin-resistant)

Brief Summary Consult the package literature for prescribing information

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: *General Precautions* — If an allergic reaction to Ceclor® (cefaclor, Lilly) occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy — *Pregnancy Category B* — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor® (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were D 18, D 20, D 21, and D 16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic — Slight elevations in SGDT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[0617B2R]

Note: Ceclor® (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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cillin and ampicillin have comparable efficacy in sterilizing middle ear effusion in 3 to 5 days. Adverse drug reactions other than diarrhea include cutaneous reactions in 5 to 10% of children. IgE-mediated urticaria and nonallergic maculopapular rashes account for the majority of cutaneous reactions; the latter does not necessitate stopping the antibiotic. In areas where B-lactamase-producing *H. influenzae* or *B. catarrhalis* are prevalent, another antibiotic such as erythromycin and sulfonamide, trimethoprim-sulfamethoxazole, or cefaclor must be chosen.[8]

Erythromycin and sulfonamide are available in a combination form and this preparation has been found to be useful in cases of persistent otitis media due to amoxicillin-resistant *H. influenzae*. It is also recommended for patients shown to be sensitive to penicillin. The erythromycin dose is 10 mg/kg/dose given every 6 hours, or 15 mg/kg/dose given every 8 hours. The side effects of abdominal pain, cramping, and diarrhea are probably reduced by taking the medicine with a meal.[9]

Trimethoprim-sulfamethoxazole may be chosen to treat persistent otitis not responding to amoxicillin. The dose is 4 mg/kg trimethoprim-20 mg/kg sulfamethoxazole per dose given every 12 hours. Side effects include hypersensitivity reactions such as skin rashes and reversible thrombocytopenia and neutropenia, both of which return to normal after cessation of therapy. There is a potential for interference with folate metabolism but unless the patient is on a prolonged course of trimethoprim-sulfamethoxazole, high doses, or has a preexisting folate deficiency, this interference with folate metabolism is reversed when the drug is stopped.[10]

Cefaclor is the only orally administered cephalosporin with a broad spectrum active against virtually all aerobic bacteria that cause acute otitis media.[11] The dose is 15 to 20 mg/kg/dose given every 8 hours. This represents an increase over the usual dose to allow for greater penetration into middle ear fluid; however, Ginsburg *et al* showed adequate concentrations in middle ear fluid following 15 mg/kg/dose or 45 mg/kg/day dosing.[12] The main disadvantage other than cost for this second-generation cephalosporin is that it can occasionally cause a hypersensitivity or serum sickness reaction consisting of erythema multiforme, which resolves upon discontinuation of the drug.

TABLE 3

Drug	Mg/kg/dose	Dosing Frequency	Cost*
Amoxicillin	15	q 8 hours	$2.81 to $6.57
Eryth-sulfo	10E/30S	q 6 hours	$8.13
TMP-SMZ	4T/20S	q 12 hours	$1.92 to $3.63
Cefaclor	15	q 8 hours	$13.82**

* Cost to the pharmacist for ten days therapy for a 10 kg child according to the listing in *American Druggist Blue Book 1985-1986*. A range is provided when more than one product is available. The cost to the patient will be higher.

** Cefaclor is available only in 75 ml and 150 ml bottles. The cost listed is for 90 ml from a 150 ml bottle. When more than 75 ml are needed for a prescription, it may be necessary for the patient to purchase the entire 150 ml bottle, depending on the policies of the individual pharmacy. The cost to the pharmacist would be $23.04 in this case.

Table 3 gives a summary of the drugs commonly used for the treatment of ASOM along with the doses recommended. By convention, therapy is usually 10 to 14 days in duration although shorter treatment courses have been studied.

Treatment Follow-up

Optimal management of ASOM includes reevaluation of each patient at the end of therapy. Pneumatic otoscopy allows assessment of the tympanic membrane's return to normal pearly gray color, translucence, visibility of bony landmarks, and return of mediolateral mobility. This is performed at 10 to 14 days after initiation of therapy, earlier if there is no resolution of symptoms in 48 to 72 hours. Presence of middle ear fluid is common and is seen in 70% of children at the end of 2 weeks, and in 40% at the end of 1 month.[13] Persistent middle ear fluid at the end of a 10-day course of antibiotics is not preventable by compliance with the antimicrobial regimen; the disappearance of this middle ear fluid cannot be hastened by the administration of additional medications such as antihistamines and/or decongestants.[14] Within 2 weeks of cessation of antimicrobial therapy, middle ear effusion will either resolve or become infected[15] in a large number of patients. Since the possibility of infection is significantly higher in children under the age of 2 years, a 2-week treatment with

prophylactic doses is recommended for that age group.

Prophylaxis

The prevention of ASOM would have a big impact on its cost, morbidity, and suppurative sequelae.[16] To date, several therapies have attempted to keep middle ear effusions from persisting and/or becoming infected.

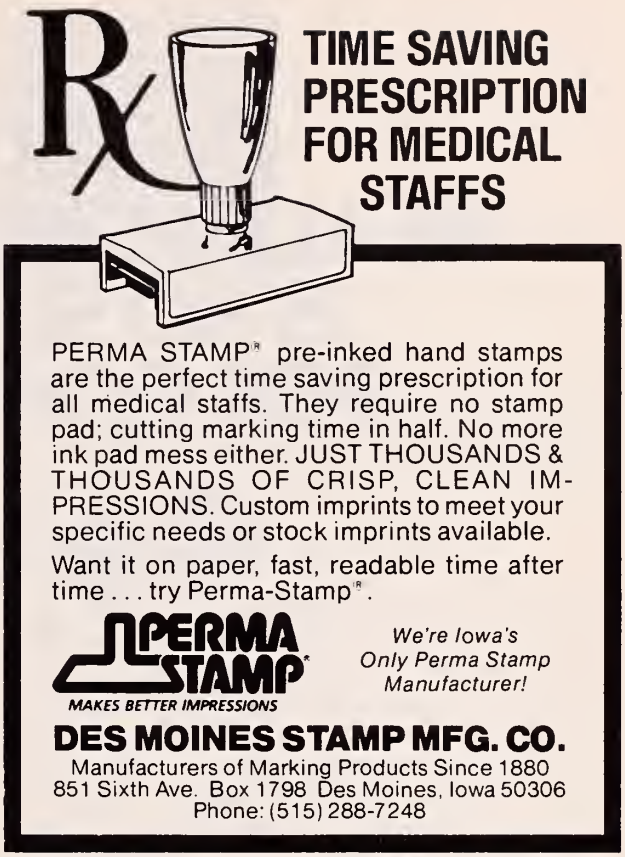
1. Antihistamine-decongestant therapy does not prevent recurrence of ASOM or hasten the resolution of middle ear effusion.

2. Daily administration of sulfisoxazole in a dose of 50 mg/kg/dose (up to 500 mg) once daily has been shown to significantly decrease the frequency of recurrent ASOM. Prophylaxis is recommended for children with 3 or more episodes of ASOM in 6 months, or 4 or more episodes of ASOM per year. Amoxicillin, 20 mg/kg/dose, given once per day may also be used. Children should be seen once per month for pneumatic otoscopy, and if an acute episode occurs, a different antibiotic should be used[17] at therapeutic doses for 10 to 14 days followed by resumption of prophylaxis. Prophylaxis usually is carried out from 6 months to a year and is needed most over the winter and spring. It is discontinued when the middle ear effusion has resolved, or the child is no longer at high risk for recurrence of ASOM.

3. Immunotherapy with the pneumococcal 14-valent vaccine has been shown to reduce the incidence of ASOM in children over 6 months of age but further studies are needed before this can become a general recommendation.[18] Since the majority of *H. influenzae*-causing otitis media is untypeable, the *Hemophilus influenzae* type b polysaccharide capsule vaccine would not be expected to have a significant impact in reducing otitis due to *Hemophilus influenzae*.

Summary

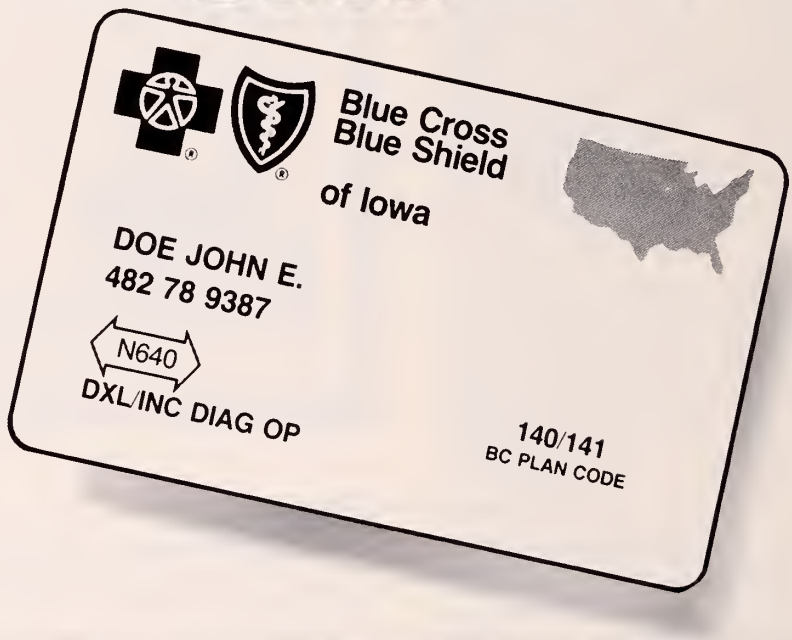
In summary, acute suppurative otitis media is a very common pediatric illness; rational use of antimicrobial therapy is the mainstay of therapy. In children with 3 or more episodes per 6 months, or 4 or more episodes per year, prophylaxis should be considered. — ROOPA S. HASHIMOTO, M.D., *Fellow, Ambulatory Division, and* JEROLD C. WOODHEAD, M.D., *Assistant Professor, Ambulatory Division, Department of Pediatrics.*



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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

EXAMINATIONS FOR EMPLOYEES/RESIDENTS IN HEALTH CARE FACILITIES

THERE WILL BE a rule change covering the physical examinations for employees and residents of hospitals and health care facilities. Effective sometime in May, 1986, these employees will be required to have a health examination when employed and every 4 years thereafter; this eliminates the current annual requirement.

This health examination may be conducted by a physician, a registered nurse, or a physician's assistant. The exam should include whatever the facility decides meets its liability requirements. The only requirement of the health examination is that it identify the health status and tuberculosis status of the employee. Complete physical examinations by a physician are no longer required by the State Department of Health. If a health care facility desires to require complete physical examinations, this is its prerogative. In addition, the requirement that a hospital employee have a physical examination upon employment and periodically thereafter has been changed to an examination upon employment and every 4 years thereafter.

In hospitals and health care facilities the patients/residents are still required to have physical examinations upon admission by a physician. In health care facilities, rules still exist to identify what the physical examination and medical history of the resident shall portray. A new requirement is the identification of the tuberculosis status of the resident every 3 years; this requirement is being challenged by the industry and may be stricken from the rule.

LOS In Extended Care Facilities

The average length of stay for residents in Iowa health care facilities is slightly under 2 years. The latest federal study of the average length of stay in nursing homes throughout the country is 18 to 19 months. The latest statistics of the Iowa Foundation for Medical Care indicate 362 days is the average length of stay for all Medicaid residents admitted since 1980.

The ISDH *recommendation* for tuberculosis control in nursing homes is as follows:

I. Employees

A. Mantoux Tuberculin Skin Test with 5 tuberculin units of P.P.D. on initial employment.

B. Chest x-ray on positive reactors to rule out active disease if not previously done and documented. Evaluate the employee for active tuberculosis if chest x-ray is positive.

C. Repeat a skin test at least every 4 years on negative reactors or when tuberculosis exposure occurs. Positive reactors identified by physicians do not need a repeat skin test or chest x-ray unless signs or symptoms of tuberculosis are present.

II. Residents

A. Mantoux Tuberculin Skin Test with 5 Tuberculin Units of P.P.D. on admission.

B. Chest x-ray on positive reactors to rule out active disease if not previously done and documented. Evaluate the resident for active tuberculosis if chest x-ray is positive.

C. Repeat a skin test at least every three years on negative reactors or when tuberculosis exposure occurs. Positive reactors identified by physicians do

(Please turn to page 192)

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STATE DEPARTMENT OF PUBLIC HEALTH

(Continued from page 191)

not need a repeat skin test or chest X-ray unless signs or symptoms of tuberculosis are present.

This change in the rules is to allow hospitals and health care facilities to set their own requirements for employees and residents. The ISDH has only established time limits for continued surveillance.

According to Laverne Wintermeyer, M.D., Division of Disease Prevention, Iowa Health Department, the elderly population is considered a reservoir for tuberculosis and the residents in the nursing homes should be protected. The publication entitled *Chest Volume 87, No. 2,* February, 1985, which is part of the National Consensus Conference on Tuberculosis, states for nursing homes:

"Development of tuberculosis from latent infection with subsequent spread of infection to contacts poses a significant threat to residents of nursing homes, their employees, and frequent visitors."

The article goes on to say: *"As part of the employee or admission procedure, each new resident and employee should be tuberculin tested. Any resident or employee found to have a positive tuberculin reaction should be evaluated clinically, because opportunities exist for transmission of tuberculosis when large numbers of people share an enclosed environment for extended periods in an institutional setting, i.e., nursing homes and long term care facilities."*

From 1975 through 1984 there were 901 tuberculosis cases reported to the Iowa State Health Department. The rate of tuberculosis per 100,000 population in Iowa was 2.3 in 1984. In 1983, Iowa ranked 47th in reported tuberculosis cases and in 1984, Iowa ranked 46th. Two-thirds of the reported tuberculosis cases were from the 55 and older age group. The medical section (The American Thoracic Society) of the American Lung Association has stated in an article on *Controlled Tuberculosis:* "The tuberculin skin test is the preferred initial method of screening. Tuberculosis transmission is a greater risk in institutions where persons remain for long periods of time. Opportunities for exposure increase because neither potential sources or susceptible contacts are likely to be quickly removed from the environment."

"The control of tuberculosis by agencies of government at the state level is mandated by law."

The control of tuberculosis by agencies of government at the state level is mandated by law. Health Departments have legal responsibilities to provide effective surveillance of tuberculosis to ensure that containment actions are carried out, and to assess program performance. Continuous evaluation is necessary to determine if a screening program is efficient and effective in reducing disease and infection rates.

We have established the minimum requirements necessary to meet the Centers for Disease Control (CDC) guidelines established for surveillance of employees and residents in health care facilities. If a facility or a physician wishes to provide more stringent requirements than the minimum, this is their prerogative.

BLACK HILLS SEMINAR

The Ninth Annual Black Hills Seminar on Advances in Clinical Pediatrics — June 18, 19 and 20, 1986, at Sylvan Lake Resort, Custer, South Dakota, sponsored by the Department of Pediatrics and Adolescent Medicine, University of South Dakota School of Medicine. Guest faculty include: Drs. James Corrigan, Jerome Klein, George Little and Lynn Taussig. For complete conference information, contact:

Lawrence R. Wellman, M.D.
Program Coordinator
USD School of Medicine
1100 S. Euclid, P.O. Box 5039
Sioux Falls, SD 57117-5039
605-333-7178

February 1986 Morbidity Report

Disease	Feb. 1986 Total	1986 to Date	1985 to date	Most Feb. Cases Reported From These Counties
Aids	1	2	1	
Amebiosis	5	11	6	Scottered
Brucellosis	0	0	0	
Chickenpox	1288	2545	1851	Scottered
Compylobocter	10	25	19	Scottered
Cytomegolovirus	2	6	0	Johnson, Polk
Eotons Agent Infection	1	1	5	Wopello
Encepholitis, virol	1	1	5	Johnson
Erythemo Infectiosum	0	0	0	
Gostroenteritis (GIV)	4441	6807	4273	Scottered
Giordiosis	24	64	42	Scottered
Hepotitis, A	3	9	3	Polk
Hepotitis, B	7	12	17	Scottered
Hepotitis, Non A-B	2	2	3	Block Howk, Scott
Hepotitis type unspecified	0	0	3	
Herpes Simplex	106	221	150	Scottered
Herpes Zoster	0	0	0	
Histoplosmosis	1	3	0	Homilton
Infectious mononucleosis	51	85	33	Scottered
Influenzo, lob confirmed	114	131	64	Scottered
Influenzo-like illness (URI)	46564	53512	12500	Scottered
Legionellosis	0	3	1	
Molorio	1	1	0	Johnson
Meningitis oseptic	2	3	6	Scott, Woodbury
bocteriol	5	14	30	Adoms, Linn, Polk, Pottowottomie, Scott
meningococcol	0	4	3	
Mumps	1	5	2	Polk
Pertussis	0	2	1	
Robies in onimols	13	24	34	Scottered
Reye Syndrome	0	0	1	
Rheumotic Fever	1	1	0	Winnebogo
Rubello (Germon meosles)	0	0	0	
Meosles	0	0	0	
Solmonellosis	10	28	13	Scottered
Shigellosis	2	3	2	Block Howk, Louiso
Toxic Shock Syndrome	0	3	3	
Tuberculosis totol ill	7	9	14	Scottered
boct. pos.	7	9	12	Scottered
Typhoid Fever	0	1	0	
Venereol diseoses:				
Gonorrheo	272	666	770	Scottered
Chlomydio	76	426	NA	Scottered
Syphilis	1	4	8	Pottowottomie

Other Non-Reportoble Diseoses: Guillion Borre Syn. — 1, Butler; Ureoplosmo Ureolyticum — 2, Block Howk, 12, Johnson, 1, Muscotine.

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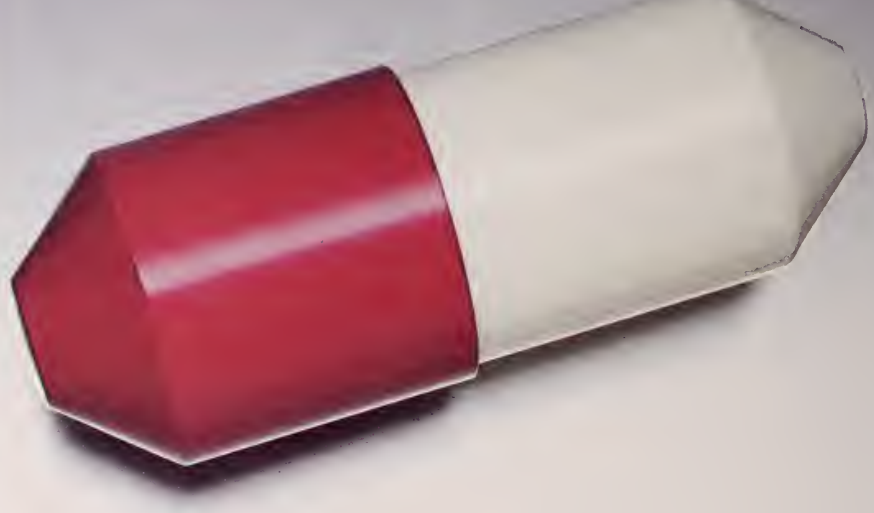
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J-6138 January 1986

In Hypertension*... When You Need to Conserve K+

Remember the Unique Red and White Capsule: Your Assurance of SK&F Quality

Serum K^+ and BUN should be checked periodically (see Warnings and Precautions)



Before prescribing, see complete prescribing information in SK&F CO. literature or *PDR*. The following is a brief summary.

* **WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

BRS-DZ:L39

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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. James Caterine has been named president of the medical staff at Mercy Hospital Medical Center in Des Moines. Other officers include **Dr. John Gay,** president-elect; and **Dr. Jeffrey Stahl,** secretary-treasurer. . . . **Dr. Nino R. Lentini** has joined Orthopedic Associates in Sioux City. Dr. Lentini received the M.D. degree at Howard University Medical School in Washington, D.C. and served his orthopedic residency at Nassau County Medical Center in East Meadow, New York. Before locating in Sioux City, Dr. Lentini practiced in New Castle, Indiana. . . . At a special dedication ceremony, Marian Health Center's Renal Dialysis Unit in Sioux City was designated the **Dr. George G. Spellman** Dialysis Unit. Dr. Spellman was the first physician in northwest Iowa to utilize the kidney dialysis treatment. Under his leadership, kidney dialysis in the Siouxland area has been expanded to include peritoneal dialysis and home hemodialysis. . . . **Dr. Roland B. Bedell, David D. Howard** and **Theodore P. Roman,** Sioux City, **Dr. Mark E. Stelzer,** Orange City, and **Dr. Timothy A. Thomson,** Mason City, have been named fellows of the American College of Surgeons. . . . **Dr. Chris W. Schmidt** has joined the Atlantic Medical Center. Dr. Schmidt received the M.D. degree at the U. of I. College of Medicine; served a year of family practice residency in

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the St. Joseph Medical Center in Wichita, Kansas; and completed his ophthalmology residency at Letterman Army Medical Center in San Francisco, California. Prior to locating in Atlantic, Dr. Schmidt was in private practice in Grand Island, Nebraska.

Dr. Allan J. Wilke, Cedar Rapids, has been named a fellow of the American Academy of Family Physicians. . . . **Dr. John S. Carlson** has joined the Fort Dodge Medical Center. Dr. Carlson received the M.D. degree and served his pediatric residency at the University of Chicago. Prior to locating in Fort Dodge, Dr. Carlson was in private practice in Kansas City, Missouri. . . . **Dr. Thomas E. Brown** joined the Mater Clinic in Knoxville in January, Dr. Brown received the M.D. degree at the University of Wisconsin; interned and served his surgery residency at Cornell Medical Center in New York City. Prior to locating in Knoxville, Dr. Brown maintained a surgery practice at the Oaklawn Hospital in Marshall, Michigan. . . . **Dr. Dennis J. Walter,** Des Moines, chairman, IMS Board of Trustees, has been named medical director and director of education for Broadlawns Medical Center. Dr. Walter has been serving as associate director and faculty member of Broadlawns Family Practice Residency Program. . . . **Dr. Paul A. Berger, Jr.,** Sioux City, has been named a diplomate of the American Board of Emergency Surgery. Dr. Berger is president of the Iowa Chapter, American College of Emergency Physicians. . . . **Dr. Edeliro Escobar,** Fort Madison, has been named chief of the medical staff at Fort Madison Community Hospital. Currently president of the Lee County Medical Society, Dr. Escobar is a fellow of the American College of Surgeons and the American Society of Abdominal Surgeons.

Dr. George D. Aurand, Clinton, has been re-elected president of the Clinton County Medical Society. Also re-elected were **Dr. John Dixon,** vice president and **Dr. James Lehman,** secretary-treasurer. . . . **Dr. Homer J. Gilfillan,** longtime Bloomfield physician, has retired. Dr. Gilfillan received the M.D. degree at the U. of I. College of Medicine; served his internship and ophthalmology residency at Henry Ford Hospital in Detroit, Michigan. He began medical practice in Bloomfield in 1946. . . . A recent article in THE NEWS-LEADER in Springfield, Missouri, recognized **Dr. Verne L. Schlaser,** former Des Moines physician, for his contributions to the Springfield community. Dr. Schlaser began medical practice in Des Moines in 1938, retiring in 1979. He is a past president of the Iowa Academy of Family Physicians and the Iowa Medical Society. . . . The following Des Moines physicians have been named officers of the Iowa Methodist Medical Center staff for 1986 — **Dr. Dale J. Andringa,** president; **Dr. Norman L. Bone,** president-elect; **Dr. Joseph D. Hall,** past president and **Dr. William G. Bartlett,** secretary-treasurer.

DEATHS

Dr. Arthur C. Richmond, 82, longtime Fort Madison physician, died November 23, 1985. Dr. Richmond received the M.D. degree at the University of Colorado College of Medicine; interned at the U. of I. College of Medicine and served his otolaryngology residency at Strong Memorial Hospital in Rochester, New York. He began medical practice in Fort Madison in 1934. Dr. Richmond was a life member of the Iowa Medical Society.

Dr. Anthony S. Owca, 67, Centerville, died January 26 at Iowa Methodist Medical Center in Des Moines. Dr. Owca received the M.D. degree at Creighton University in Omaha, Nebraska. He began medical practice in Centerville in 1949.

Dr. S. D. Porter, 82, longtime Grinnell physician, died January 30 at the Mayflower Home in Grinnell. Dr. Porter received the M.D. degree at Creighton University College of Medicine in Omaha, Nebraska; interned at St. Catherine's in Omaha and served his surgery residency at the University of Pennsylvania in Philadelphia. He began his practice of medicine in Grinnell in 1930, retiring in 1982. Dr. Porter was a member of the International College of Surgeons and life member of the Iowa Medical Society.

Dr. Cornelius B. Murphy, 79, Alton, died February 21 at a hospital in Orange City. Dr. Murphy received the M.D. degree at the University of Minnesota School of Medicine and served his internal medicine residency at Minneapolis General Hospital. He began medical practice in Alton in 1936, retiring in 1972.

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Registration Reception

SATURDAY, MAY 17

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FEE FREEZE AND ASSIGNMENT
HOSPITAL AND PHYSICIAN DRG'S
GRAMM-RUDMANN EFFECTS

Business in Medicine 1:00 - 4:30
UNDERSTANDING THE BLUES
IPA's, PPO's and HMO's
HOSPITAL-MEDICINE INC.'s
JOINT VENTURES

Concurrent Workshops 4:45 - 6:00
LEGISLATIVE UPDATE
REGULATORY UPDATE
EVOLVING PRACTICE PATTERNS

Negotiating Technique 7:30 - 9:00

SUNDAY, MAY 18

Medical-Legal Issues 8:30 - 12:00
MALPRACTICE
STAFF ORGANIZATION
SOCIETIES AND UNIONS
TRUSTS AND ANTITRUST

Afternoon Workshops 1:00 - 5:00
COST-EFFECTIVE PREVENTION
PHYSICIAN CONTRACTS
TORT REFORM
PEER REVIEW FUTURE

Negotiating Critique 7:30 - 9:00

MONDAY, MAY 19

Concurrent Workshops 8:30 - 12:00
PROFESSIONAL LIABILITY
NEGOTIATING PARTICIPATION

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A Monthly Commentary

IN THE PUBLIC INTEREST

Ethiopia: The Need Goes On

SEVERAL MEMBERS of the Iowa medical community have made significant contributions to victims of the continuing famine in Ethiopia.

Stephen Gleason, D.O., Des Moines, coordinated the 25-member IOWA CARES committee appointed by Governor Branstad. IOWA CARES raised some $700,000 for food and medical supplies. William Rosenfeld, M.D., Mason City, headed a famine relief medical team that served 3 months in Gowaha.

More recently, Ian Smith, M.D., Iowa City, visited Ethiopia to evaluate possible faculty exchanges between The University of Iowa and the University of Addis Ababa. He also assessed the effectiveness of last year's IOWA CARES gifts and future needs.

Despite extensive humanitarian efforts, starvation seems certain to recur this year for at least 5.5 million Ethiopians.

More than a dozen "feeding stations" were set up in the Shoa region north of Addis Ababa, utilizing food and nutrition aids such as the vitamins and I.V. solutions sent by the IOWA CARES program. At least two-thirds of those fed at these stations (from 100 to 500 families per day) are children. Many of the adults were also treated for cerebral malaria, endometritis, shigellosis and other medical emergencies.

Dr. Smith, professor of internal medicine and director of the geriatrics program in the Iowa College of Medicine, reported to Governor Branstad he had made rounds in 2 hospitals where the disease distribution was 11% rheumatic heart disease (usually with congestive cardiac failure), 10% diabetes, 7% cirrhosis (rarely alcoholic, usually post hepatitic), 5% typhoid fever and 3% tuberculosis.

"Within the limitations of the physical plant and available apparatus, the teaching seemed very good and the standard for medical care seemed high" at the major hospital he visited, Dr. Smith reported.

Food production is the top priority issue. Agricultural production has been falling at the rate of 5% per year as the population grows at a 3% rate. Dr. Smith and others see several great needs in addition to famine relief again this year: money, food, medications, medical supplies (catheters, biopsy needles, rubber gloves and X-ray film) and people trained in agriculture, medicine and teaching skills.

Iowa physicians, nurses and therapists willing to provide "hands-on" assistance may do so in a number of ways. These range from helping maintain the feeding and medical care stations to serving as external examiners for medical students' final exams. For those who cannot make time commitments, involving even short periods, opportunity to assist is no further away than the nearest IOWA CARES fund-raiser.

While consulting in the UI Department of Internal Medicine this year, an Ethiopian physician, Eyassu Habte-Gabr, M.D., is helping orient physicians and serving as co-chair of the IOWA CARES medical group. He is assisted by Dr. Smith and Jay Cayner, director of social services in University Hospitals.

For a helping profession such as medicine, service with IOWA CARES is natural, consistent with personal and professional goals and truly *In the public interest.*

April 1986

Iowa Medicine

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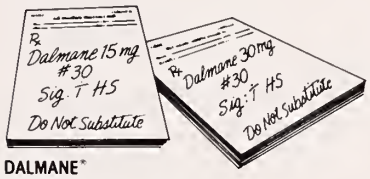
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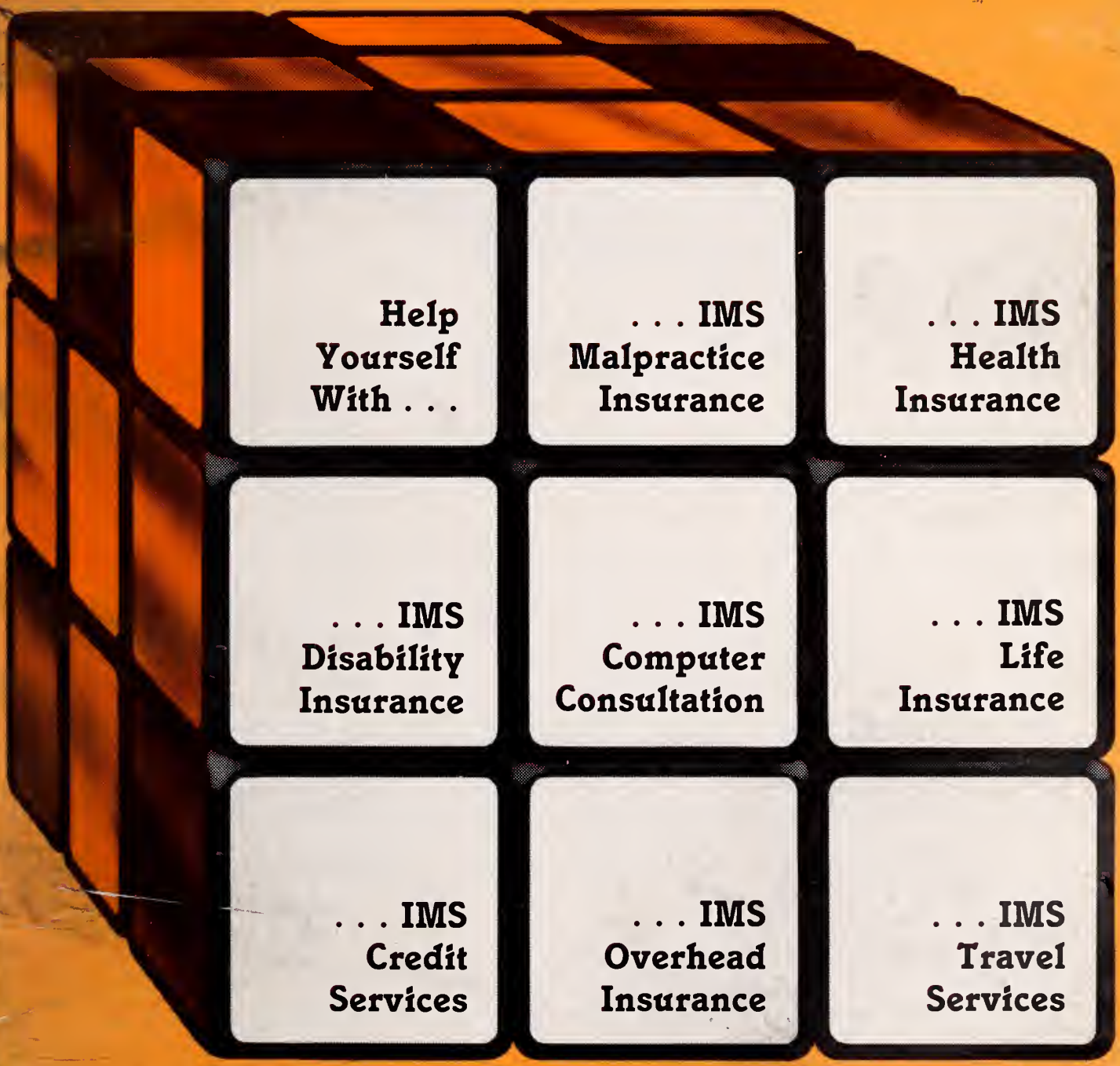
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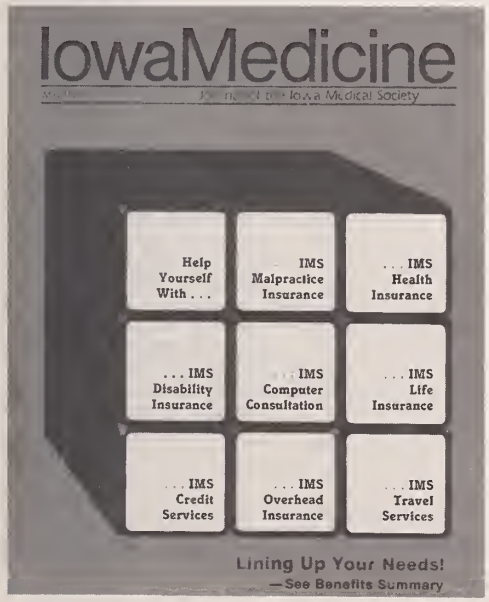
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ABOUT THE COVER



ABOUT THE COVER — IMS member physicians have significant benefits. Some are intangible and some are very real. Representation is a key benefit, representation with government, with other health care providers, with third parties, with business and industry, with the public in general. Of additional consequence are those tangible benefits such as liability insurance, disability insurance, health insurance, life insurance, practice management support, etc. See the benefits summary for a review of the various IMS programs.

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IOWA MEDICINE, Journol of the Iowo Medicol Society (ISSN 0746-B709) is published monthly by the Iowo Medicol Society, 1001 Grond Avenue, West Des Moines, Iowo 50265. Subscription Price: $15 per yeor. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postoge poid ot Des Moines, Iowo, ond at additionol moiling offices. POSTMASTER: Send oddress chonges to IOWA MEDICINE, Journol of the Iowo Medical Society, 1001 Grand Avenue, West Des Moines, Iowo 50265.

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IOWA ADVERTISING: Contoct Mrs. Polly Lynch, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowo 50265. Phone 515/223-1401

EDITORIAL CONTENT: The work of vorious outhors is found in the diversified content of IOWA MEDICINE. The Society respects these individual efforts but is unoble to ossume responsibility for the occuracy of thot which is submitted. Monuscripts and editorial inquiries should be directed to Editor, IOWA MEDICINE, 1001 Grond Avenue, West Des Moines, Iowo 50265

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DES MOINES, IOWA
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"LASERS IN MEDICINE"

JUNE 11, 1986

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PRESIDENT'S PRIVILEGE



Our Iowa Medical Society leadership ranks are changing as provided in the governing language. These thoughts are prepared in my last days as IMS president. By the time they are read, Dean Caraway will have succeeded me in office. I extend good wishes and ongoing support to Dr. Caraway. I urge you to do the same.

A retiring president often mentions the speed with which his term in office has passed. *Boy, it sure has!*

It seems only a "cup of coffee" ago we formed our Medical Liability Task Force. These 13 TF physicians did a superb job of identifying and drafting our 1985/86 goals for medical tort reform in Iowa. Our public hearings in Cedar Rapids, West Des Moines and Sioux City last July were attended by close to 200 persons. They honed our perceptions of medical liability.

The Task Force action blueprint came to the IMS Executive Council in September. It was called an historic document, and indeed it was. A series of 10 legislative briefings followed in October.

In October (the 13th, to be exact) more history was made. A special session of the IMS House of Delegates was held. The Delegates were asked: Just how active and aggressive will Iowa Medicine be in addressing our medical liability circumstances? *Very,* said the Delegates. Full support was given by more than 120 physicians to a plan which included a special dues assessment of $125.

Much good use has been and is being made of these funds. They have supported the compilation of facts and public opinion on Iowa liability conditions. This information has been used advantageously during the 1986 legislative session.

As this is prepared, bills have passed the Iowa Senate and the Iowa House. They await merger. The result will benefit Iowa. Importantly, however, the consideration will continue as a special state commission is created to report further on the subject before 1986 is over.

Indeed, it has been a busy year. It has been a pleasure to serve as president of the Iowa Medical Society. I extend best wishes to you and your family.

Emmett B. Mathiasen M.D.

Emmett B. Mathiasen, M.D.
President

DOCTOR, Do You Need A Life Insurance Check-up?

Take this quiz to see! Unless you answer true in each case, chances are you need to look at your insurance condition!

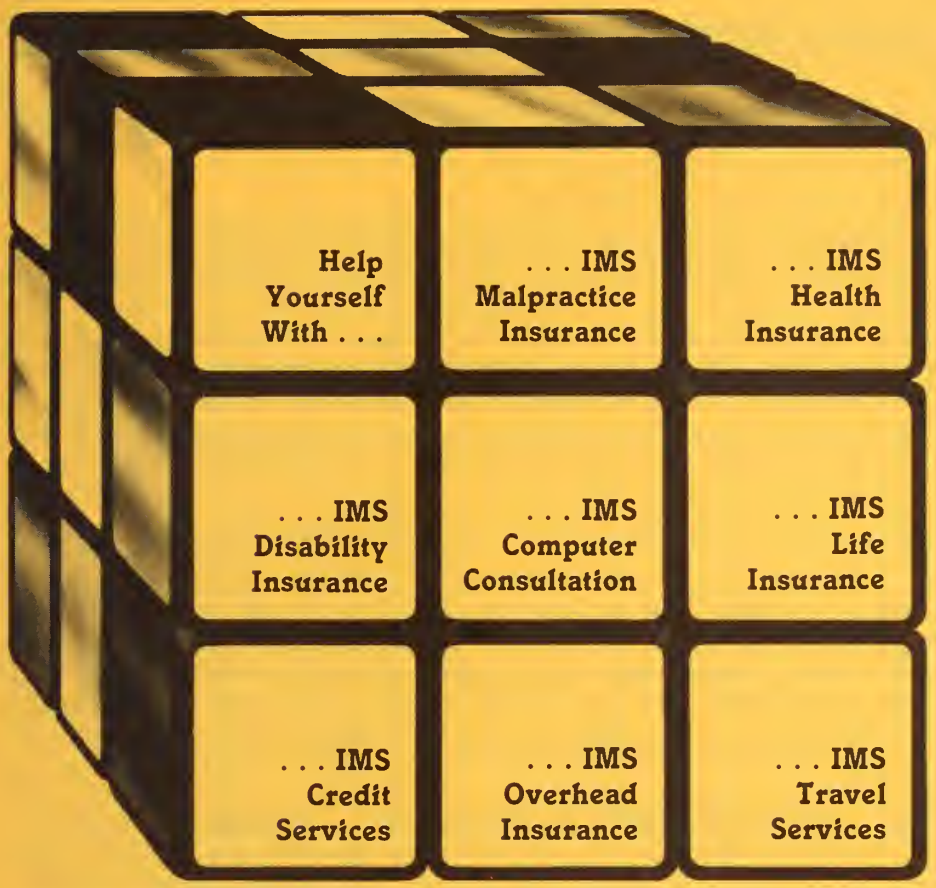
TRUE	FALSE	
_____	_____	**I can increase, decrease, or stop premium payments without affecting my coverage.**
_____	_____	**I can change my coverages without buying additional policies.**
_____	_____	**I can obtain 10% to 11% tax-deferred interest on my existing cash values.**
_____	_____	**I can withdraw my cash tax-free without charge.**
_____	_____	**I have maximum protection from my existing policies.**

Important as it is, you may not be sure of your personal insurance situation. That's where we can help. As insurance administrator for the Iowa Medical Society, we are skilled in helping member physicians review their individual circumstances. We can offer you full analysis of your personal and business insurance status. It's part of our service!

We'll be happy to have you call to arrange a review of your insurance situation. Please ask for Mr. Bernie Lowe and Mr. John Bain. We're at The Prouty Company.

The Prouty Company

309 Court Avenue, Suite 510, Des Moines, Iowa 50309
Telephone: 515/246-1712 or 800/532-1105



IOWA MEDICAL SOCIETY INSURANCE SERVICES FOR MEMBER PHYSICIANS

On the following pages is a summary of the insurance coverages which are available from the Iowa Medical Society. All member physicians are invited and encouraged to review this outline to see if and where any of these coverages may fill a void in or supplement an existing individual insurance program. This suggestion is directed particularly to those physicians who are new to membership in the Society.

The Committee on Member Services of the Iowa Medical Society is responsible for the periodic evaluation of these programs to determine their value and receptivity. It is the further duty of the Committee to consider and recommend appropriate new coverages.

Any questions or comments regarding these programs may be directed to the administrator as shown or to the Headquarters of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265 (Telephone — 515-223-1401; In-WATS — 1-800-422-3070).

INSURANCE PLANS FOR

1. **PROFESSIONAL LIABILITY — COVERAGE:** Medical malpractice insurance protection up to $5 million. New coverage is available in claims-made form. Competitive rates are provided. **SPECIAL FEATURES:** This is a joint program involving the Iowa Medical Society (through the Iowa Physicians Mutual Insurance Trust) and AMACO, a wholly-owned subsidiary of the American Medical Association. There will be extensive Iowa physician involvement in application acceptance, claims adjudication and risk management. **ADMINISTRATOR:** IMS SERVICES, 1001 Grand Avenue, West Des Moines, Iowa 50265. **INSURANCE COMPANY:** American Medical Assurance Company (AMACO), Chicago, Illinois and Iowa Physicians Mutual Insurance Trust (IPMIT). **ELIGIBILITY & HOW TO APPLY:** All IMS members may apply. Applicants must meet underwriting criteria. Contact IMS headquarters for application information.

2. **HOSPITAL/MEDICAL — COVERAGE:** Three options available — full benefit — $100 deductible — $500 deductible. Benefits available to physicians, their families and employees. Excellent benefits to cover both hospital and medical services. **SPECIAL FEATURES:** 365-day Blue Cross. 365-Day Blue Shield UCR — Major Medical. 365-day nervous/mental, drug addiction, TB and alcoholism. Optional dental benefits available. Special open enrollment each January and February. **ADMINISTRATOR:** The Prouty Company, 309 Court Avenue, Suite 510, Des Moines, Iowa 50309. **INSURANCE COMPANY:** Blue Cross/Blue Shield, Des Moines, Iowa. **ELIGIBILITY AND HOW TO APPLY:** All members, their families and employees. Apply to The Prouty Company, 1-515/246-1712, or Iowa toll-free, 1-800/532-1105.

3. **INCOME PROTECTION ACCIDENT & SICKNESS DISABILITY (Crown Life) — COVERAGE:** New maximum benefits available up to $12,000 per month. Rates again reduced in 1986. Definition of disability is "your specialty" for full term of contract. Other optional benefits available including "income replacement," residual disability (first in the industry), cost of living adjustment rider, lifetime sickness benefits and future increase option. **SPECIAL FEATURES:** Policy is guaranteed renewable/non-cancellable, meaning right of renewal and rates are guaranteed to age 65. Policy is conditionally renewable between ages 65 and 72 for a physician who continues practice. Waiting periods of 30, 60, 90, 180 or 365 days are available. **ADMINISTRATORS:** The Prouty Company, 309 Court Avenue, Suite 510, Des Moines, Iowa 50309. **INSURANCE COMPANY:** Crown Life, Toronto, Canada. **ELIGIBILITY AND HOW TO APPLY:** All IMS members in active practice who are age 60 and under. Apply to The Prouty Company, 1-515/246-1712, or Iowa toll-free, 1-800/532-1105.

4. **INCOME PROTECTION ACCIDENT AND SICKNESS DISABILITY (Continental Insurance) — COVERAGE:** New maximum benefits available up to $6,000 monthly. Benefit durations are up to lifetime for accident and to age 65 for sickness. Reduced rates for younger members. New improved definition of disability providing "your specialty" coverage for full term of contract. Reduced rates for members under age 40. **SPECIAL FEATURES:** Benefits begin the first day of disability for accident and the eighth day for sickness or first day of hospital confinement for sickness. Optional plans available with benefits beginning the 31st day, 61st day, 91st day, or 181st day of disability. Claims paid directly from administrator's office. Special renewal features and conversion options are automatically included. New improved residual disability rider is available. **ADMINISTRATOR:** The Prouty Company, 309 Court Avenue, Suite 510, Des Moines, Iowa 50309. **INSURANCE COMPANY:** Commercial Insurance Company, Newark, New Jersey. **ELIGIBILITY & HOW TO APPLY:** New members eligible for base amount of coverage regardless of medical history if application is made within 90 days of membership. All insurable members eligible any time prior to age 55. The coverage continues to age 70 for active members. Special conversion policy available after age 70. Apply to The Prouty Company, 1-515/246-1712, or Iowa toll-free, 1-800/532-1105.

5. **GROUP LONG-TERM DISABILITY — COVERAGE:** Benefits ranging from $5,000 monthly to $25,000 monthly for physicians and/or their employees. **SPECIAL FEATURES:** Benefits are available on a "guaranteed issue" basis in offices with 5 or more physicians or 10 or more employees. Optional benefits available which include residual disability and a "pension accrual" benefit. **ADMINISTRATOR:** The Prouty Company, 309 Court Ave., Suite 510, Des Moines, Iowa 50309. **INSURANCE COMPANY:** CNA (Chicago, Illinois), Unionmutual, Portland, Maine. **ELIGIBILITY & HOW TO APPLY:** Any office where there are 2 or more physicians or 10 or more employees. Applicants must be age 65 or under. Apply to The Prouty Company, 1-515/246-1712, or Iowa toll-free, 1-800/532-1105.

IOWA MEDICAL SOCIETY MEMBERS

6. **OFFICE OVERHEAD EXPENSE DISABILITY — COVERAGE:** Available from $500 monthly to a new maximum of $6,000 monthly as a reimbursement for office expenses (rent, employees' salaries, utilities, professional liability premiums, etc.). **SPECIAL FEATURES:** Benefits begin after a waiting period of 15 days or 30 days with benefits payable up to 24 months. Premiums are tax deductible. Special renewal features and conversion option automatically included. **ADMINISTRATOR:** The Prouty Company, 309 Court Ave., Suite 510, Des Moines, Iowa 50309. **INSURANCE COMPANY:** Commercial Insurance Company, Newark, New Jersey. **ELIGIBILITY AND HOW TO APPLY:** Applicant must be in active practice, under age 60, and a member of the IMS. Apply to The Prouty Company, 1-515/246-1712, or Iowa toll-free, 1-800/532-1105.

7. **JUMBO TERM LIFE INSURANCE — COVERAGE:** Designed to provide jumbo term life insurance. Minimum amount available — $50,000 with no maximum limit. Policy is guaranteed renewable/non-cancellable — rates and renewability are guaranteed. Special premium discount for "non-smokers." Coverage available to spouse and there is a 5-year rate "set back" for female applicants. **SPECIAL FEATURES:** Benefits do not reduce with age. Policy is renewable through age 75 and full conversion available without evidence of insurability is available for those under age 65. High non-medical limits allow member physicians to purchase general amounts of term insurance without medical exams. Waiver of premium is automatically included. **ADMINISTRATOR:** The Prouty Company, 309 Court Ave., Suite 510, Des Moines, Iowa 50309. **INSURANCE COMPANY:** North American Company for Life and Health Insurance, Chicago, Illinois. **ELIGIBILITY & HOW TO APPLY:** Any member under age 65 may apply. Coverage is also available to spouses. Minimum amount — $50,000 — no maximum amount. Apply to The Prouty Company, 1-515/246-1712, or Iowa toll-free, 1-800/532-1105.

8. **TERM LIFE INSURANCE — COVERAGE:** Provides up to $100,000 in low cost term life insurance in increments of $25,000. Policy is fully convertible after it has been in force one year. Benefits begin reducing 20% every 5 years beginning at age 50. Plan is renewable to age 70. **SPECIAL FEATURES:** Waiver of premium and full conversion privilege are available after one year. A new member under age 65 may apply for one unit of coverage with guaranteed issue if application is made within 90 days of membership. **ADMINISTRATOR:** The Prouty Company, 309 Court Ave., Suite 510, Des Moines, Iowa 50309. **INSURANCE COMPANY:** American Mutual Life, Des Moines, Iowa. **ELIGIBILITY & HOW TO APPLY:** Any member under the age 65 may apply. New members may apply for one year of coverage if under age 65 with guaranteed issue if done within 90 days of membership. Apply to The Prouty Company, 1-515/246-1712, or Iowa toll-free, 1-800/532-1105.

9. **UNIVERSAL LIFE — COVERAGE:** Allows the physician to "buy term and invest the difference" under one contract. Favorable tax treatment of investment fund (currently tax deferred). Premiums and face amount may be adjusted upward and downward depending upon the physician's circumstances. **SPECIAL FEATURES:** Modified underwriting allows a previously substandard or rated risk the possibility of standard life insurance (high non-medical limits — no exam required). Coverage is available for spouse and children. **ADMINISTRATOR:** The Prouty Company, 309 Court Ave., Suite 510, Des Moines, Iowa 50309. **INSURANCE COMPANY:** Hawkeye National Life Insurance Co.—Des Moines, Iowa. **ELIGIBILITY & HOW TO APPLY:** Any member under age 85, spouse and/or family member, employee of member, employee's spouse and/or family member may apply. Amount of coverage provided at insured's option with minimum amount of $25,000. Apply to The Prouty Company, 1-515/246-1712, or Iowa toll-free, 1-800/532-1105.

10. **GROUP PERSONAL AUTOMOBILE INSURANCE — COVERAGE:** Available to physicians, their families, and their employees. Wide range of deductibles and coverages available. **SPECIAL FEATURES:** Premium discount due to IMS endorsement. "Guaranteed Issue" provision for all physicians with valid drivers license. **ADMINISTRATOR:** The Prouty Company, 309 Court Ave., Suite 510; Des Moines, Iowa 50309. **INSURANCE COMPANY:** BLC Insurance Company (Bankers Life), Des Moines, Iowa. **ELIGIBILITY & HOW TO APPLY:** All members of IMS and their employees may apply who have valid drivers license. Apply to The Prouty Company, 1-515/246-1712, or Iowa toll-free, 1-800/532-1105.

11. **HIGH LIMITS OF ACCIDENTAL DEATH & DISMEMBERMENT — COVERAGE:** Accidental death, dismemberment and loss of sight covered. Special permanent and total disability feature available. Amounts available from $25,000 to a new limit of $250,000. Spouse and family coverage also available. Rates reduced for members and family members in 1986. **SPECIAL FEATURES:** 24-hour, world wide coverage, aviation coverage as a passenger. 365-day coverage. Renewable to age 70. No medical underwriting. **ADMINISTRATOR:** The Prouty Company, 309 Court Ave., Suite 510, Des Moines, Iowa 50309. **INSURANCE COMPANY:** Insurance Company of North America, Philadelphia, Pennsylvania. **ELIGIBILITY & HOW TO APPLY:** Any member under age 65, spouse and/or family. Apply to The Prouty Company, 1-515/246-1712 or Iowa toll-free, 1-800/532-1105.

12. **WORKERS' COMPENSATION: — COVERAGE:** Provides Workers' Compensation coverage as required by law. Approved rates in effect. Program meets employer's obligations for occupational injuries. **SPECIAL FEATURES:** Has a savings plan which returns money to insureds based on experience. Record of dividend return is good. **ADMINISTRATOR:** Casualty Reciprocal Exchange, Dodson Insurance Group, P.O. Box 559, Kansas City, Missouri. **INSURANCE COMPANY:** Casualty Reciprocal Exchange, Dodson Insurance Group, Kansas City, Missouri. **ELIGIBILITY & HOW TO APPLY:** Any member may apply. Apply to Mr.Ken Coulter, Iowa representative, 205 8th Avenue South, Clear Lake, Iowa 50428; telephone — 515/357-6739.

13. **RETIREMENT PLANS SERVICE — COVERAGE:** Complete Pension, Profit-Sharing and Keogh administrative services. **SPECIAL FEATURES:** Plan design, annual administration, employee communications, government reports. **ADMINISTRATOR:** The Prouty Company, 309 Court Ave., Suite 510, Des Moines, Iowa 50309. Apply to The Prouty Company, 1-515/246-1712 or Iowa toll-free, 1-800/532-1105.

OTHER SPECIAL BENEFITS

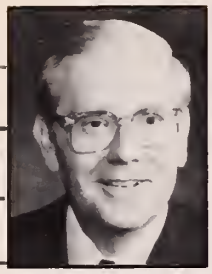
Other special member benefit programs are sponsored by the Iowa Medical Society and are available to interested member physicians. In addition to the insurance coverages set forth in the preceding list, the Iowa Medical Society has these further benefit programs available:

COMPUTER CONSULTATION WITH ENDORSED HARDWARE/SOFTWARE
DEBT COLLECTION SERVICE
TRAVEL PROGRAMS
AUTO RENTAL DISCOUNTS
GOLD MASTERCARD PROGRAM
FINANCIAL PLANNING CONSULTATION

Please contact IMS Headquarters if you wish additional information on the programs described above.

Dean M. Harms, M.D.

QUESTIONS AND ANSWERS



Every year, 56% of all new blindness occurs in people over 65. Over half of it is preventable. Dean M. Harms, M.D., an Ames ophthalmologist, discusses the newly-implemented National Eye Care Project and how it will benefit elderly Iowans who cannot afford to seek ophthalmologic care. Dr. Harms is president of the Iowa Academy of Ophthalmology.

What is the National Eye Care Project?

It is an effort to provide eye care to low income elderly who have no other source of care or who have lost contact with an ophthalmologist. The project is sponsored by the American Academy of Ophthalmology and the Iowa Academy of Ophthalmology. It is funded by contributions from physicians and a grant from the Foundation of the American Academy of Ophthalmology. Ophthalmologists involved in the project will provide eye care to the disadvantaged elderly at no expense to the patient.

How will the project work?

Anyone may call the Helpline number (1-800-222-EYES) to receive a packet of information. People who qualify for the program will be assigned to a volunteer ophthalmologist in their area. The patient-ophthalmologist match will be made by a computer on a rotating basis. To qualify for the project, a patient must be an American citizen age 65 or older who is unable to afford eye care. They cannot have seen an ophthalmologist for 3 years.

How many Iowa ophthalmologists are participating?

There are 90 active practicing ophthalmologists in Iowa and 70 have volunteered to participate.

What efforts have been made to let Iowans know about the project?

Governor Terry Branstad officially kicked off the project at a March 31 press conference. He cited it as "an example of volunteerism which adds to Iowa's greatness as a state." The Iowa Commission on the Aging is supporting the project and has assisted in disseminating information to elderly Iowans.

What services will patients receive?

Qualifying patients will receive an examination and surgical and medical eye care at no out-of-pocket expense. Volunteer ophthalmologists will accept Medicare or insurance payments as payment in full. If no insurance is available, no charge will be made to the patient. The program does not cover eye glasses or hospital expenses. However, it is hoped hospitals will assist with the program by accommodating especially needy patients.

How many Iowans do you estimate will qualify for the project?

There are approximately 394,000 Iowans over age 65. We estimate 5% or 20,000 may qualify for the project. We expect to receive about 3,000 calls in the first year of the program.

What eye problems are common among the elderly?

It is estimated that each year, 56% of all new blindness occurs in people over age 65. Half

(Please turn to page 224)

Allergic Mechanisms In Bronchial Asthma

HAL B. RICHERSON, M.D.
Iowa City

Significant research aimed at improved treatment modalities for bronchial asthma is active in the Asthma and Allergic Diseases Center at the University of Iowa. This article describes a clinical investigation of allergic mechanisms and pathogenesis of bronchial asthma.

BRONCHIAL ASTHMA is a syndrome associated with reversible airways obstruction and underlying bronchial hyperresponsiveness to nonspecific stimuli. Clinical findings include dyspnea, wheezing, cough, excessive mucus production and eosinophilia of blood and secretions. Recent studies have emphasized inflammatory components during late phase responses to inhaled antigens.

Successful symptomatic therapy of bronchial asthma with an array of pharmacologic agents may distract the physician from exploring the possibility of an allergic etiology. Traditional classification distinguishes extrinsic (allergic) asthma from intrinsic (idiopathic) asthma. In patients with allergic asthma the identification of responsible allergens may lead to important preventive measures, such as environmental control, and to potentially useful therapeutic maneuvers, such as allergen immunotherapy.

An allergy evaluation in bronchial asthma patients is an important adjunct to the workup. It includes an environmental, seasonal and occupational history, and application and interpretation of skin tests to inhalant allergens. Documentation of an allergic mechanism can lead to improved, more specific therapy.

The Asthma and Allergic Diseases Center at the University of Iowa is funded by the National Institute of Allergy and Infectious Disease and involves a group of collaborative investigators interested in allergic mechanisms and pathogenesis of bronchial asthma. Our research focus stems from a recognition that inhaled allergen by patients with allergic bronchial asthma results in both early and late phase asthmatic responses. Such responses may be associated with hyperresponsive airways and chronic inflammation indistinguishable from chronic asthma seen clinically.[1]

Our goal is to clarify humoral and cellular mechanisms responsible for the asthmatic state. Techniques of study include the use of bronchoprovocation with responsible allergens and nonspecific agents such as methacholine; bronchoalveolar lavage; and evaluation of biochemical mediators, cellular fluxes,

The author is director of the Allergy-Immunology Division in the Department of Internal Medicine, University of Iowa College of Medicine.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF MAY 1986

and permeability changes associated with asthmatic responses.

Clinical Studies

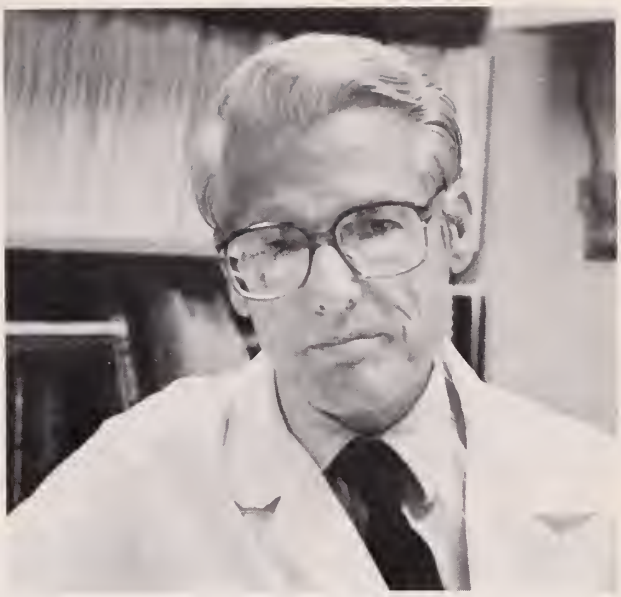
Several years ago, we began to investigate late-phase asthmatic responses (LAR). *Alternaria*-induced responses were studied in seasonal allergic asthmatics because of their prevalence and importance in the Midwest. More than 90% of allergen challenges with *Alternaria* resulted in LAR. A few patients had LAR *only*. Bronchial challenges using pollen allergens (grass, ragweed) produced LAR in approximately one-half of allergic challenged patients.

In a group of 14 subjects challenged with allergen once a week for 6 weeks, 2 developed new LAR. Those experiencing repeated LAR began to develop a new onset of symptoms ranging from nighttime cough to exercise asthma. In some, chronic asthma developed. These symptoms resolved after the cessation of challenges. The occurrence of these symptoms was correlatedwith LAR and the level of serum allergen-specific IgE antibody.[2]

Smaller airways may be preferentially affected by inflammation during an LAR that has resulted in cellular exudate, parenchymal inflammation, edema and excess mucus. Seventeen nonsmoking, mildly symptomatic allergic asthmatic volunteers were measured in pulmonary function tests (FEV_1). The effects of gas density on flow rates using helium-oxygen ($HE\text{-}O_2$) flow-volume loops were measured at 3 points (early, 6 hour and 24 hour) after challenge. There was a strong trend for the LAR severity to directly correlate with the degree of peripheral airways obstruction.[3]

Local inflammatory changes in asthmatic airways were studied using bronchoalveolar lavage (BAL) following bronchoprovocation with allergen.[4] Mildly symptomatic allergic asthmatic patients were challenged with aerosolized allergen "out of season." It was assumed, as has been shown for other diseases, the contents of the BAL would reflect ongoing cellular fluxes and other inflammatory accompaniments.

Volunteers included 3 groups of subjects: allergic asthmatics, allergic rhinitics and normals. In addition to BAL performed "out of season" at baseline, 2-4 hr or 24 hr following aerosol challenge, antigen was also instilled



Hal B. Richerson, M.D.

locally into segmental airways through a wedged fiberoptic bronchoscope. This was followed immediately by lavage of that segment and a control segment, repeated 48 or 96 hrs. later.

The results of *inhalation challenge* suggested airway inflammation secondary to allergen challenge involved neutrophils and eosinophils during the early phase and eosinophils during the late phase. Based on electron microscopic evidence, macrophages and platelets may have been participants. The presence of increased T helper cells in BAL during the season and IgE-secreting cells following challenge may have pathogenetic importance for asthma.

The initial airway response to *local instillation of antigen* was local blanching followed by dilatation of superficial vessels, edema and partial closure of the subsegmental bronchus. These observations suggest allergic asthmatic airways are very sensitive to allergen and respond with both bronchial narrowing and persistent inflammation. Changes in cell number obtained by BAL were characterized by an increase in total cells with access to the alveolar space, especially neutrophils, eosinophils and macrophages. Increased numbers of T helper cells and young macrophages were also found.

In studies of allergen immunotherapy, we concluded that immunotherapy may preferentially reduce the severity of the LAR in adult patients and may concurrently reduce the se-

verity of bronchial airway hyperresponsiveness.

Discussion

Our studies are among those providing increasing evidence to correlate the late asthmatic response (LAR) with increased airways hyperresponsiveness, chronic or recurrent asthmatic symptoms and circulating allergen-specific IgE antibody. The peak LAR seems to preferentially affect small airways. Immunotherapy (injection therapy with allergen; allergy "shots") may preferentially modify the late response and thereby reduce nonspecific bronchial hyperresponsiveness in a manner similar to protection afforded by allergen avoidance.[5]

Accumulating information indicates the LAR in human airways is an inflammatory response involving mast cells, neutrophils, eosinophils, platelets, alveolar macrophages and effector T lymphocytes. The precise location, actions, and interactions of these cellular components and accompanying mediators are not known. The use of bronchoalveolar lavage following inhalational or local challenge with allergen provides a tool to help determine phenomena associated with asthmatic responses, their role in clinical asthma and possible strategies for improved treatment modalities. A better understanding of allergic and immunologic defensive mechanism should lead to better specific immunotherapeutic maneuvers.

Many investigators have participated in the University of Iowa Asthma and Allergic Diseases Center in addition to the program director. These include W. James Metzger, M.D., Gary W. Hunninghake, M.D., John E. Butler, Ph.D., and John Weiler, M.D., principal investigators of individual projects.

Collaborating investigators are Thomas B. Casale, M.D., Donald Zavala, M.D., Robert B. Fick, Jr., M.D., Zuhair K. Ballas, M.D., Pope Moseley, M.D., Robert C. Lakin, M.D., Kenneth M. Nugent, M.D., Robert A. Clark, M.D., and Stephen I. Wasserman, M.D.

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Letter to the Editor

MOURNS DEMISE OF ICSS

We join with Dr. Jim Bishop in mourning the demise of the Iowa Clinical Surgical Society. Iowa surgeons benefited from membership and participation in this organization, and it was always respected and admired by its internist colleagues.

The corresponding organization for internists, The Iowa Clinical Medical Society, has metamorphosed to become the Iowa component of the American Society of Internal Medicine. We have retained the word "clinical" to designate our organization as a historical reference to the parent Iowa Society.

The American Society of Internal Medicine addresses itself to social and economic issues as areas of primary concern leaving the academic, research, and educational activities to the American College of Physicians.

We internists are grateful for the existence of an organization that deals with the bewildering array of pre-paid plans, diagnosis related groups, peer review, quality assurance, pre-discharge review, pre-admission certification, capitation, etc., etc.

The regional meetings in various communities held by both the Iowa Clinical and Surgical Societies are remembered with fond memories. They were informative and provided a wonderful opportunity for exchange of views and sharing of experiences.

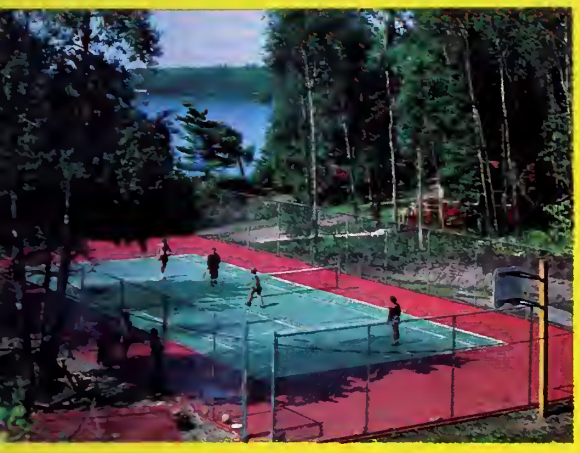
Perhaps we can work with our colleagues in surgery to resurrect some sort of regional educational programs hosted by local communities throughout the state. — JOHN S. CHAPMAN, M.D., *Immediate Past President, Iowa Clinical Society of Internal Medicine.*

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Handicapped Riders Sit 'Tall In The Saddle'

Dr. Mark E. Wheeler, Sioux City orthopedic surgeon, is the recipient of the 1985 Physician of the Year Award presented by the Governor's Committee on Employment of the Handicapped. Dr. Wheeler was cited for his work with handicapped children and adults in the Sioux City area. He and his wife, Sue, conduct horseriding classes for the physically or mentally handicapped, blind or visually impaired or those with learning disabilities.

THERE ARE a lot of people who think Mark Wheeler, M.D., is "right on" in his efforts to help handicapped children and adults.

Dr. Wheeler is a Sioux City orthopedic surgeon. He is also recipient of the 1986 Physician's Award from the Governor's Committee on Employment of the Handicapped. The award was presented April 11 at the committee's annual banquet.

Numerous letters from co-workers and parents of handicapped children praised Dr. Wheeler for his involvement in Special Troopers Adaptive Riding School (STARS). The STARS program is headquartered at the Wheeler farm north of Sioux City. It provides horseback riding classes for the handicapped.

"Mark Wheeler has recognized that individuals with physical limitations need to develop confidence in themselves before they can become involved in society and employment," reads one letter nominating Dr. Wheeler for the 1986 Physician's Award.

Dr. Wheeler and his wife, Sue, assumed responsibility for the STARS program in 1984 when a 4-H group decided to disband it because of the expense. Through vigorous fund raising efforts, the Wheelers re-established STARS at their own farm. Sue Wheeler directs the program.

In addition to maintaining his medical practice, Dr. Wheeler donates several evenings a week to working with handicapped students enrolled in STARS. Two physical therapists and other volunteers also assist at the school.

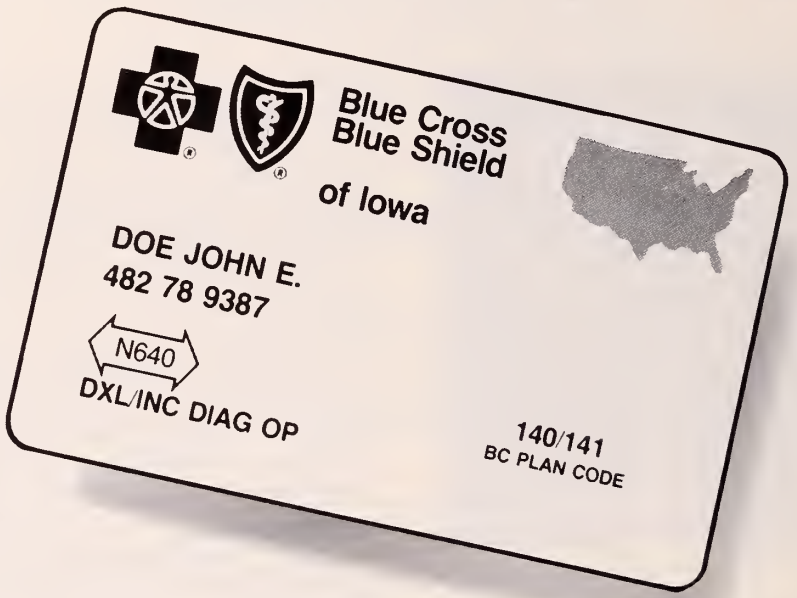
After starting with a small enrollment of 13 students, the STARS program has flourished. Dr. Wheeler is on the 11-member STARS board of directors, which is responsible for raising the $12,000 needed this year. He is also a member of the board of directors for the Siouxland Easter Seal Society.

Letters of nomination sent to the Governor's Committee on Employment of the Handicapped praise the STARS program and Dr. Wheeler for his devotion to it.

"Dr. Wheeler's countless hours of devotion to STARS have provided innumerable benefits for disabled children and adults involved in the program. From evaluating each rider, to side-walking, to smiling with pride at the students' accomplishments, Dr. Wheeler's participation is more than evident," reads a letter from the mother of a boy enrolled in STARS.

Another parent summed up Dr. Wheeler's efforts this way: "His smiles and words of encouragement have helped many handicapped students dare to step out and reach for goals that may otherwise never have been reached."

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New UI Medical Psychiatry Unit Serves Special Patients

In 1986 The University of Iowa Hospitals and Clinics opened a 12-bed combined Medical Psychiatry Unit. One of only a few in the country, the unit provides care for patients with concurrent psychiatric and medical illnesses. An overview of the specialized staff and service available is presented here.

PATIENTS WITH concurrent psychiatric and medical illnesses often require simultaneous care for each condition. The majority of these patients can be treated through consultation.

However, in some patients the combination of psychiatric and medical symptoms impedes satisfactory treatment in a separate psychiatric or medical setting.

For these patients, The University of Iowa Hospitals and Clinics opened a 12-bed combined Medical Psychiatry Unit in April 1986. One of only a few in the nation, the unit provides care for patients with a combination of serious medical and psychiatric diseases in a protected environment. It also provides full general medical services.

"Patients with a wide variety of medical and psychiatric conditions need to be cared for on the Medical Psychiatry Unit," explains Roger Kathol, M.D., director of the unit and assistant professor of psychiatry and internal medicine.

Patients with medical illnesses such as cancer, chronic renal failure, thyroid disease, systemic lupus erythematosis, chronic obstructive lung disease and recurrent asthma will benefit from care in the Medical Psychiatry Unit if they concurrently experience depression, delirium, or other incapacitating psychiatric conditions.

Other concurrent conditions which would require care in a combined medical psychiatry unit are:

—affective symptoms or psychosis associated with drug ingestion or withdrawal when the physical condition is medically unstable,



COMMITMENT TO CARE — The idea for the combined Medical Psychiatry Unit grew from a commitment to care for the whole patient, says Dr. Roger Kathol (pictured), unit director and board-certified in both internal medicine and psychiatry.

—dilutional hyponatremia associated with psychogenic water drinking, factitious disorders, or CNS dysfunction manifesting with psychiatric symptoms, and

—active primary psychiatric disease with concurrent medical illness.

The gamut of concurrent conditions is wide. Commonly, however, the patients require active intervention for both medical and psychiatric conditions. These patients are thoroughly evaluated and appropriately treated for each condition.

Specialized Staff and Environment

To operate the Medical Psychiatry Unit effectively and safely, special consideration has been given to staff and environment. Specialized training in both internal medicine and psychiatry has been provided for nurses and support staff of the new unit.

Two staff physicians have completed residencies in both internal medicine and psychiatry (Dr. Kathol and David Lewis, M.D., assistant professor of internal medicine and psychiatry). They provide most of the care to patients on the unit. When they are not attending the unit, physicians from the departments of Internal Medicine and Psychiatry share responsibilities for patient care.

To provide the appropriate environment for the care of medical psychiatry patients, University Hospitals has renovated an area in the General Hospital (4 Southeast). The unit is designed and equipped to provide the full range of medical services in a secure yet pleasant environment for those with emotional disturbances.

Information

For more information about the Medical Psychiatry Unit, contact Roger Kathol, M.D., Medical Psychiatry Unit, University of Iowa Hospitals and Clinics, Iowa City, Iowa 52242. 319/353-3180

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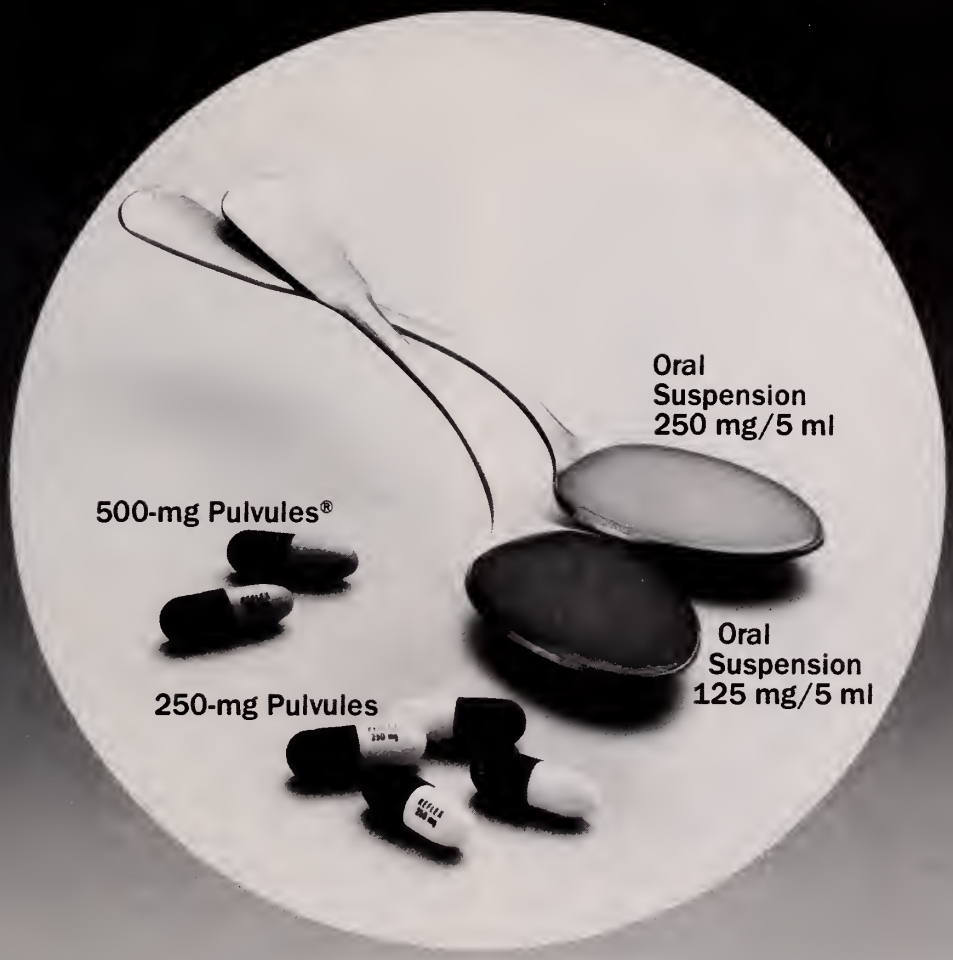
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Nerve-saving Prostate Operation Preserves Sexual Function



For most patients, prostate cancer surgery results in the loss of sexual function. However, a new surgical technique now utilized at The University of Iowa Hospitals and Clinics saves the nerves to the penis and preserves sexual function. This surgical technique is performed by the head of the UI Department of Urology.

SURGICAL REMOVAL of the prostate is currently the best treatment for localized prostate cancer, but until recently the operation caused impotence in over 95% of patients.

Now a new surgical technique saves the nerves to the penis and preserves sexual function (ability to attain an erection sufficient for intercourse) in 60 to 80% of patients.

The University of Iowa Hospitals and Clinics is one of the few medical centers in the nation performing this nerve-saving operation. One of the pioneers of this technique is Richard D. Williams, M.D., professor and head, Department of Urology. Dr. Williams was also one of the first to successfully apply this technique to bladder cancer.

NEW SURGICAL TECHNIQUE — As treatment for localized prostate cancer, Richard D. Williams, M.D., UI Department of Urology, removes the prostate but saves nerves to the penis. The technique preserves sexual function in 60 to 80% of patients. Dr. Williams also applies this technique in patients with bladder cancer.

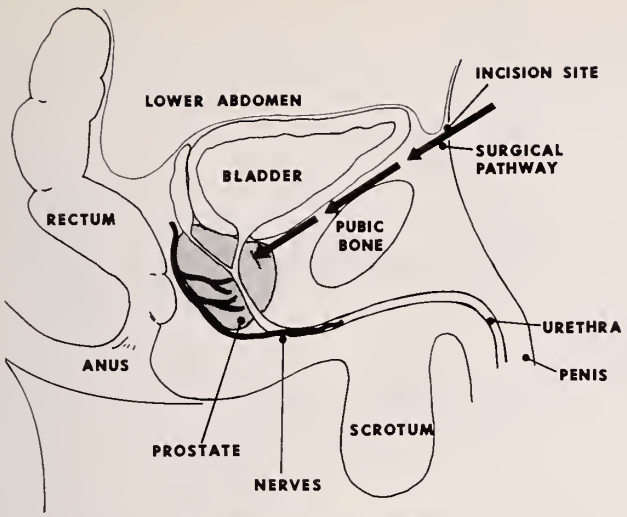


Figure 1 — The prostate is covered by fibrous tissue containing nerves to the penis. Before surgical removal of the prostate, this fibrous sheath is separated from the prostate, saving the nerves. The old surgical technique inadvertently removed the tissue containing the nerves, resulting in loss of sexual function.

Surgical Approach

The new surgical technique is recommended only for the 10-15% of patients whose prostate or bladder cancer has not spread to other tissues and whose tumor nodule is not excessively large. For these patients, the nerve-saving operation is as effective as the surgical procedure that does not save the nerves to the penis.

The incision for the nerve-saving operation is made just above the pubic bone in the lower abdomen. To reach the prostate, the surgeon creates a path between the pubic bone and bladder. Fibrous tissue is separated from the prostate, and nerves to the penis are carefully pushed aside. The prostate and a small part of the urethra are surgically removed. The distal portion of the urethra is connected to the bladder to preserve urination. (Figure 1)

The most important factors in performing the nerve-saving operation are: 1) controlling blood loss to maintain a clear view of the surgical area, 2) using the retropubic surgical approach (lower abdominal area behind the pubic bone) rather than the perineal approach (the area between the scrotum and anus), and 3) carefully detaching the fibrous sheath that surrounds the prostate and contains the nerves to the penis.

Recovery

Patients usually return home 6 to 7 days after the operation. In the months following the operation, encouragement from the surgeon is psychologically necessary to reassure patients sexual function will return in most cases.

Patients usually regain sexual function within 3 to 8 months following surgery. This is regarded as the ability to attain an erection sufficient for intercourse.

Early Detection

Dr. Williams emphasizes an annual digital rectal examination after age 50 is the best method for early detection of prostate cancer which is the second most common cancer and the third leading cause of cancer death in American men.

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Malignant Peritoneal Mesothelioma: A Difficult Diagnosis

FERNANDO J. RIVERA, M.D.
Council Bluffs, Iowa

Only 20% of all malignant mesotheliomas originate from the peritoneal cavity, making this condition difficult to diagnose. This case report will help physicians increase their awareness of malignant peritoneal mesothelioma and its possible link to asbestos exposure.

A PATIENT who developed recurrent ascites was later found to have malignant peritoneal mesothelioma. In this case, the difficulty of pre-operative diagnosis using CT scan, histology of ascitic fluid and conventional x-rays (upper gastro-intestinal x-ray, barium enema, chest x-ray) is demonstrated.

Malignant mesothelioma affecting the peritoneum is rare. Only 20% of all malignant mesotheliomas originate from the peritoneal cavity.[1]

This report concerns a patient with a history of weight loss and ascites several weeks before a malignant peritoneal mesothelioma was diagnosed in the operating room.

Case Report

A 70-year-old white male, a retired railroad employee, was first seen in the office on November 7, 1981 with complaints of slight abdominal distension. Further evaluation of apparent ascites was advised but the patient was asymptomatic and not amenable to this advice. A month later he returned with more abdominal distension and evidence of easy fatigability, weight loss, dyspnea and frequency of urination. He was hospitalized on the same day.

The physical examination revealed cachexia, marked abdominal distension and prominent abdominal wall veins. Laboratory findings showed normal chemistry except for low calcium and albumin, a normal CBC and a negative urinalysis. The liver profile was normal except for LDH isoenzymes which showed either hepatic or skeletal muscle damage pattern. The EKG was normal. A chest x-ray was normal. The upper gastro-intestinal tract x-rays showed a hiatal hernia with reflux. A liver scan was negative. A barium enema showed a few diverticula. A CT scan of abdomen was unremarkable. An intravenous pyelogram showed moderate residual urine, with poor voiding.

An abdominal paracentesis was performed 24 hours after admission. A total of 7400 cc straw colored fluid was obtained. Reports were negative for malignancy and there was no growth of aerobic and anaerobic organisms in 24, 48 and 72 hours.

A proctosigmoidoscopy revealed no abnormalities. A urologist was consulted because of the urinary difficulty. A cystoscopy and transurethral resection of the prostate for benign prostatic hypertrophy were performed. Postoperative course was unremarkable. He was discharged 11 days after admission.

(Please turn to page 223)

Fernando J. Rivera, M.D. is in the private practice of general surgery in Council Bluffs.

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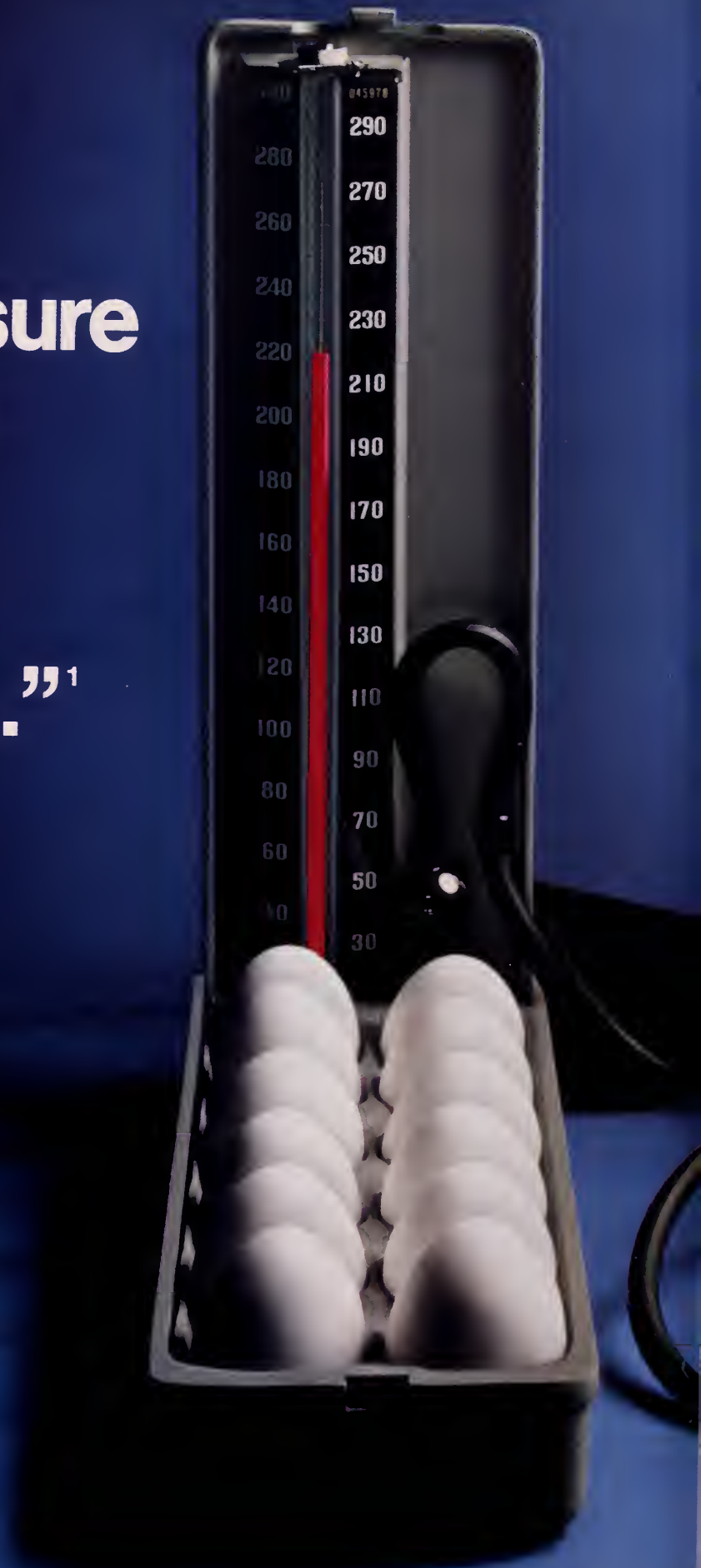
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"High blood pressure should be a red flag to screen for cholesterol..."[1]



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The Framingham Heart Study[2] showed that over two thirds of the 35 and older population in that study with systolic blood pressures over 145 mmHg also had serum cholesterol levels of 225 mg/dL or more, and 46% had levels above 250 mg/dL.

While many clinical laboratories still report 250 mg/dL as "normal" cholesterol, the NIH Consensus Development Conference Statement on Cholesterol and Heart Disease[3] stated that any level above 220 mg/dL is associated with a significantly increased risk of coronary heart disease.

You need to know, because high cholesterol parallels high blood pressure as a CHD risk factor.

Epidemiological studies and large-scale prevention trials have indicated that as with blood pressure, serum cholesterol levels are proportionately related to CHD risk.

Specifically, *"...for every 10 mmHg rise in pressure, there appears to be about a 30% rise in cardiovascular risk."*[4] *"...for every one percent you go up the American cholesterol scale, your subsequent rate of heart attack rises two to three percent."*[5]

And although the specific impact on CHD has not been determined, we know that many of the principal agents used to lower blood pressure actually increase cholesterol.

Wytensin® lowers blood pressure effectively without raising cholesterol.

While Wytensin is not a cholesterol-lowering agent and is not indicated for the treatment of hyperlipidemia, in controlled clinical trials[6] it caused a slight, sustained decrease in total cholesterol without reducing the HDL fraction or altering serum triglycerides.

At the same time, Wytensin lowered blood pressure as effectively as hydrochlorothiazide, propranolol, clonidine or methyldopa. Drowsiness and/or dry mouth, the most frequent side effects noted with Wytensin, usually diminish or disappear over time. In fact, in double-blind studies to date, discontinuance of therapy for all side effects occurred in about 13% of patients.



WyTensin®
(guanabenz acetate)

Antihypertensive therapy that does not increase cholesterol

See important information on following page.

References: 1. Glueck CJ: Remarks in the symposium, *Blood Pressure, Cholesterol and Coronary Heart Disease*, Washington, D.C., March 31, 1985. 2. *The Framingham Study, An epidemiological investigation of cardiovascular disease*, Section 28, U.S. Dept. of Health, Education, and Welfare. 3. National Institutes of Health Consensus Development Conference Statement, 1984: Vol 5, No 7, p 4. 4. Chobanian AV: The influence of hypertension and other hemodynamic factors in atherogenesis. *Progress in Cardiovascular Diseases, XXVI* (3): 177, Nov/Dec, 1983. 5. Castelli WP: Remarks in the symposium, *Blood Pressure, Cholesterol and Coronary Heart Disease*, Washington, D.C., March 31, 1985. 6. Data on file, Wyeth Laboratories.

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WyTensin®
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Antihypertensive therapy that does not increase cholesterol

Brief Summary

Before prescribing, consult the complete package circular.

Indications and Usage: Treatment of hypertension, alone or in combination with a thiazide diuretic

Contraindication: Known sensitivity to the drug

Precautions: 1. Sedation. Causes sedation or drowsiness in a large fraction of patients. When used with centrally active depressants, e.g., phenothiazines, barbiturates and benzodiazepines, consider potential for additive sedative effects. 2. Patients with vascular insufficiency: Like other antihypertensives use with caution in severe coronary insufficiency, recent myocardial infarction, cerebrovascular disease, or severe hepatic or renal failure. 3. Rebound. Sudden cessation of therapy with central alpha agonists like **Wytensin** may rarely result in "overshoot" hypertension and more commonly produces increase in serum catecholamines and subjective symptomatology.

INFORMATION FOR PATIENTS: Advise patients on **Wytensin** to exercise caution when operating dangerous machinery or motor vehicles until it is determined they do not become drowsy or dizzy. Warn patients that tolerance for alcohol and other CNS depressants may be diminished. Advise patients not to discontinue therapy abruptly.

LAB TESTS: In clinical trials, no clinically significant lab test abnormalities were identified during acute or chronic therapy. Tests included CBC, urinalysis, electrolytes, SGOT, bilirubin, alkaline phosphatase, uric acid, BUN, creatinine, glucose, calcium, phosphorus, total protein, and Coombs' test. During long term use there was small decrease in serum cholesterol and total triglycerides without change in high-density lipoprotein fraction. In rare instances occasional nonprogressive increase in liver enzymes was observed, but no clinical evidence of hepatic disease.

DRUG INTERACTIONS: **Wytensin** was not demonstrated to cause drug interactions when given with other drugs, e.g., digitalis, diuretics, analgesics, anxiolytics, and antiinflammatory or antiinfective agents, in clinical trials. However, potential for increased sedation when given concomitantly with CNS depressants should be noted.

DRUG/LAB TEST INTERACTIONS: No lab test abnormalities were identified with **Wytensin** use.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: No evidence of carcinogenic potential emerged in rats during a two-year oral study with **Wytensin** at up to 9.5 mg/kg/day, i.e., about 10 times maximum recommended human dose. In the Salmonella microsome mutagenicity (Ames) test system, **Wytensin** at 200-500 mcg per plate or at 30-50 mcg/ml in suspension gave dose-related increases in number of mutants in one (TA 1537) of five *Salmonella typhimurium* strains with or without inclusion of rat liver microsomes. No mutagenic activity was seen at doses up to those which inhibit growth in the eukaryotic microorganism, *Schizosaccharomyces pombe*, or in Chinese hamster ovary cells at doses up to those lethal to the cells in culture. In another eukaryotic system, *Saccharomyces cerevisiae*, **Wytensin** produced no activity in an assay measuring induction of repairable DNA damage. Reproductive studies showed a decreased pregnancy rate in rats given high oral doses (9.6 mg/kg), suggesting impairment of fertility. Fertility of treated males (9.6 mg/kg) may also have been affected, as suggested by decreased pregnancy rate of mates, even though females received drug only during last third of pregnancy.

PREGNANCY: Pregnancy Category C. WYTENSIN® MAY HAVE ADVERSE EFFECTS ON FETUS WHEN ADMINISTERED TO PREGNANT WOMEN. A teratology study in mice indicated possible increase in skeletal abnormalities when **Wytensin** is given orally at doses 3 to 6 times maximum recommended human dose of 1.0 mg/kg. These abnormalities, principally costal and vertebral, were not noted in similar studies in rats and rabbits. However, increased fetal loss has been observed after oral **Wytensin** given to pregnant rats (14 mg/kg) and rabbits (20 mg/kg). Reproductive studies in rats have shown slightly decreased live-birth indices, decreased fetal survival rate, and decreased pup body weight at oral doses of 6.4 and 9.6 mg/kg. There are no adequate, well-controlled studies in pregnant women. **Wytensin** should be used during pregnancy only if potential benefit justifies potential risk to fetus.

NURSING MOTHERS: Because no information is available on **Wytensin** excretion in human milk, it should not be given to nursing mothers.

PEDIATRIC USE: Safety and effectiveness in children less than 12 years of age have not been demonstrated; use in this age group cannot be recommended.

Adverse Reactions: Incidence of adverse effects was ascertained from controlled clinical studies in U.S. and is based on data from 859 patients on **Wytensin** for up to 3 years. There is some evidence that side effects are dose-related. Following table shows incidence of adverse effects in at least 5% of patients in study comparing **Wytensin** to placebo, at starting dose of 8 mg b.i.d.

Adverse Effect	Placebo (%) n = 102	**Wytensin** (%) n = 109
Dry mouth	7	28
Drowsiness or sedation	12	39
Dizziness	7	17
Weakness	7	10
Headache	6	5

In other controlled clinical trials at starting dose of 16 mg/day in 476 patients, incidence of dry mouth was slightly higher (38%) and dizziness was slightly lower (12%), but incidence of most frequent adverse effects was similar to placebo-controlled trial. Although these side effects were not serious, they led to discontinuation of treatment about 15% of the time. In more recent studies using an initial dose of 8 mg/day in 274 patients, incidence of drowsiness or sedation was lower, about 20%. Other adverse effects reported during clinical trials but not clearly distinguishable from placebo effects and occurring with frequency of 3% or less: Cardiovascular—chest pain, edema, arrhythmias, palpitations. Gastrointestinal—nausea, epigastric pain, diarrhea, vomiting, constipation, abdominal discomfort. Central nervous system—anxiety, ataxia, depression, sleep disturbances. ENT disorders—nasal congestion. Eye disorders—blurring of vision. Musculoskeletal—aches in extremities, muscle aches. Respiratory—dyspnea. Dermatologic—rash, pruritus. Urogenital—urinary frequency, disturbances of sexual function. Other—gynecomastia, taste disorders.

Drug Abuse and Dependence: No dependence or abuse has been reported.

Overdosage: Accidental ingestion caused hypotension, somnolence, lethargy, irritability, miosis, and bradycardia in two children aged one and three years. Gastric lavage and pressor substances, fluids, and oral activated charcoal resulted in complete and uneventful recovery within 12 hours in both. Since experience with accidental overdosage is limited, suggested treatment is mainly supportive while drug is being eliminated and until patient is no longer symptomatic. Vital signs and fluid balance should be carefully monitored. Adequate airway should be maintained and, if indicated, assisted respiration instituted. No data are available on **Wytensin** dialyzability.

Dosage and Administration: Individualize dosage. A starting dose of 4 mg b.i.d. is recommended, whether used alone or with a thiazide diuretic. Dosage may be increased in increments of 4 to 8 mg/day every one to two weeks, depending on response. Maximum dose studied has been 32 mg b.i.d., but doses this high are rarely needed.

How Supplied: (guanabenz acetate) Tablets, 4 mg, bottles of 100 and 500; 8 mg and 16 mg, bottles of 100.

Revised 2/14/85

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7. My mother won't let me.
8. I didn't sign up.
9. I'm going out of town.
10. Asthma runs in my family.
11. I forgot to eat this morning.
12. I'm allergic to flowering magnolia."



Each one's a doozy, but we're hoping you won't use any of them. Give blood through the American Red Cross. Please, don't chicken out.

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American Red Cross

Post-operative follow-up showed more abdominal distension. On January 18, 1982, approximately 2 months after hospital discharge, another abdominal paracentesis was performed. About 6500 cc straw colored fluid was obtained. The smears and cell blocks showed reactive mesothelial cells and histocytes with scattered chronic inflammatory cells. No malignancy was noted. The patient continued to refuse abdominal exploration despite recurrent ascites. Office visits in the following months revealed no further abdominal paracentesis. His weight varied between 73.6-82.3 Kg (160-175) pounds due to ascites.

On September 27, 1982, a vague mass was palpated on both lower quadrant areas. The mass was firm, slightly tender and more appreciable on the left lower quadrant. The patient was agreeable to exploration. He was admitted on September 29, 1982 and an exploratory laparatomy was performed the following day.

A huge solid mass which entirely replaced the omentum was found. (Figures 1&2) The mass extended from the dome of the left diaphragm to the lateral gutters, down to the pelvic cul-de-sac. Portions of the anterior parietal wall were adherent to the mass. Serosal surfaces of the bowels were studded with malignant deposits. Multiple seedings were noted on the parietal peritoneum. The solid mass was removed and weighed 1400 gm. Only the seedings on the serosal surface and peritoneum were left behind. The histologic picture was of a malignant mesothelioma, epithelial type.

The patient was started on chemotherapy (dimethyl-l-triazeno-imidazole-4-carboxamide [DTIC] 450 mg, initially in October). A month later he was on Cytoxan 800 mg IV, Adrimycin 80 mg IV, plus DTIC 250 mg IV given on 5 consecutive days. The same protocol was followed in the month of January.

A CT scan of the upper abdomen and pelvis done on February 1, 1983 showed a marked decrease in the size of the lesions noted November 20, 1982. Since his last follow-up, the patient has been eating well, has no complaints and no evidence of ascites.



Figure 1

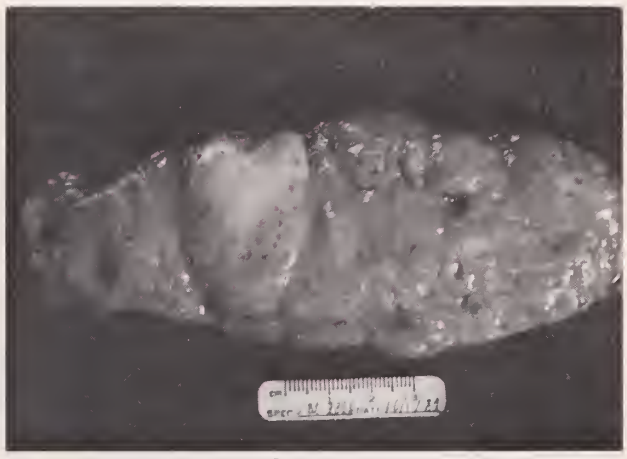


Figure 2

Comment

This patient demonstrates the difficulty in diagnosing malignant mesothelioma pre-operatively.[2-5] In addition, its incidence is quite rare.[6]

Exposure to asbestos appears to be the most commonly associated etiology in the development of malignant mesothelioma. The patient presented here does not have a history of direct exposure to asbestos although his railroad employment presents the possibility. In the literature, exposure has been reported varying from 0 to 100%.[7, 8] Although recently Chahinian *et al* had a series of 69 patients with evidence of 70 to 80%.[9]

Review of the literature showed other correlating factors: recurrent diverticulitis,[10] radiation, [11-13] industrial dusts or chemicals other than asbestos.[14]

Treatments of malignant peritoneal mesothelioma range from diagnostic surgical exploration with partial resection, radiation alone,[15] radiotherapy with external radiation and intracavitary P^{32} and AU^{198}, [16] and chem-

otherapy.[17] In this patient, surgical excision plus chemotherapy has provided a survival period of more than 21 months since first diagnosed.

Author's Note: *Since filing the report of this case, I have been involved in the diagnosis and treatment of 2 cases of malignant mesothelioma involving the pleural cavity, both epithelial types. These patients were also former railroad employees.*

References

The references noted in this article are available on request either from the author or the editors of IOWA MEDICINE

QUESTIONS AND ANSWERS

(Continued from page 211

of this blindness is probably preventable. The elderly often accept reduced vision as part of growing older and fail to seek eye care when they may have a treatable condition. With early detection and treatment, ophthalmologists have made great strides in care of glaucoma, cataracts and diabetic retinopathy. Macular degeneration remains as one of the most common causes of vision loss. We are beginning to see some positive results in a few patients treated with laser in the early stages of macular degeneration.

How is the National Eye Care Project financed and how long will it last?

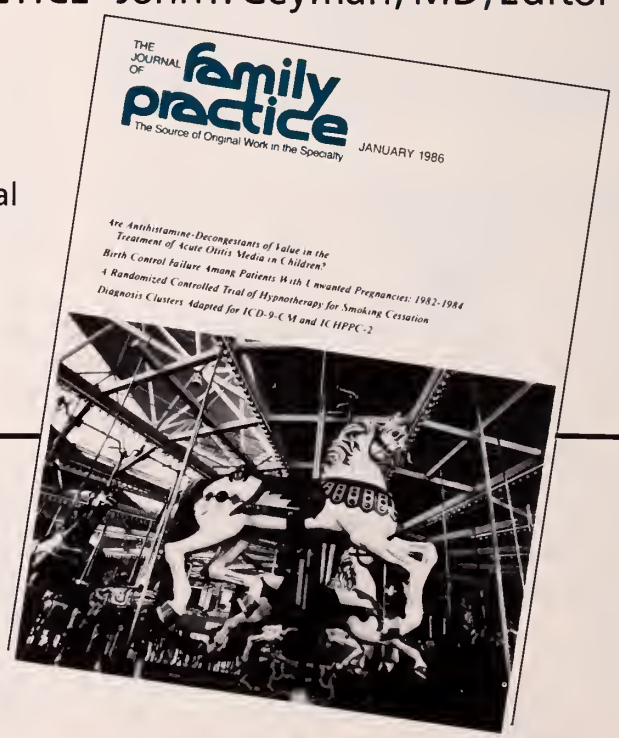
Nationwide, the start-up cost for the project was over 3 million dollars. Most of this was donated by ophthalmologists during a special fund-raising campaign. There were also donations from several corporations involved in the eye care industry. There is no specific termination date for the program. We are hoping the project will allow needy Iowans to receive eye care for many years to come.

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COMMENTING EDITORIALLY



PERFECT CHILDREN

INTRIGUE coupled with amazement, tempered by a degree of revulsion. These were my reactions to a recent story in The Wall Street Journal.* The authors discussed the implications of genetic engineering under investigation at Michael Reese Medical Center in Chicago. There are far-reaching implications of this explosive new technology. Genetic manipulations are becoming a concern of scientists, lawyers, politicians and theologians, as well as society as a whole. Current experiments are of great concern to sociologists; fear exists we may inadvertently create an entirely new technology that could lead to a eugenics program.

Prenatal diagnostic techniques are used to help women in their early thirties to determine whether their unborn child is afflicted with trisomy 21. In some areas, parents wish to know in advance the sex of the fetus. The fragile-X chromosome studies have led to much research as to why some affected individuals are mentally retarded and others not. The site of the break in one X-chromosome may be a clue to the difference.

More esoteric research involves genetic study to determine the likelihood of criminal tendencies, heart disease at an early age, autistic behavior, or learning deficiencies. Scientists will be able to identify the genes that control the various facets of the individual's future health status as well as behavioral tendencies. In turn, the present generation of persons so desirous of "only the best" may accept only a "perfect child."

How will society deal with attempts to select human genetic traits? History has recorded various attempts in eugenics . . . ancient societies destroying defective offspring to the more recent government-controlled attempts at eugenics by the Nazis in the 1930's. How can such genetic manipulations be under national control? Will human interference with natural selection of genetic traits endanger the species over the long run?

One can surmise that inevitably governmental regulations will limit the degree of human interference in the production of children. So it should be! The implications are so great that prospective parents should not have such control over destiny. Future couples may well decide to avoid undesirable traits in their offspring such as trisomy 21, Huntington's disease or such, but to select from several fertilized ova at the 4-cell stage in test tubes to be subsequently implanted into the uterus for further development is too far reaching.

> ***". . . but to attempt to produce a 'perfect' child is tampering pure and simple."***

The proliferation of certain genetic disorders is not desirable, but to be all-selective to attempt to produce a "perfect child" is tampering pure and simple. Paul the Apostle, in his letters to the Romans, stated that one must hold on to that which is good.

There are so many other ills of society that need correction, and unfortunately we seem never able to correct them through legislation or education. High rates of lung cancer from cigarette smoking continues; hypertension and heart disease from injudicious diet and lifestyle continues; disregard to admonitions on alcohol use, and carelessness in driving motor vehicles, each of these causes great numbers

*Bishop, J.E. and Waldholz, M.: The search for the perfect child. Wall Street Journal, March, 1986.

of deaths and disabilities each year. I could go on and on.

We have immense problems now that require great changes in societal behavior. A new — no, a renewed — concept of responsibility is needed. Genetic manipulation is not going to bring perfect children. A sense of responsibility of one man to another will gain more for all of us. There is nothing selfish about that. Our profession is in a unique position to foster a better sense of responsibility to self as well as others. The opportunity is ours; we can set good examples, and we can educate those whom we serve. — M.E.A.

THE ART OF MEDICINE

HIPPOCRATES said, "The physician must have at his command a certain ready wit." He also said that a physician should look, as "plump as nature intended him to be." Forget the "plump" bit for now, and let's focus on the "wit." A "ready wit" clearly refers to the art of medicine which, in large part, is concerned with the personal inter-relationship between doctor and patient, and the patient's family.

We all know that youth must be served, but wisdom sometimes resides in those who have earned their gray hairs by being kicked around by some of the hard knocks of experience as well as by the embarrassments caused by one's own witlessness.

A wise, elderly physician once gave this advice to a young intern: "Always remember two precepts when you enter the practice of medicine: Never let a patient get well without prescribing some medicine; and never let a patient die without making a diagnosis." That advice (maybe given with tongue in cheek) relates to the intangible concept known as the "art of medicine."

At this time, we wish to join that elderly physician in spirit, and pass along to young doctors another 2 or 3 precepts. These precepts, like the foregoing precepts and like the Ten Commandments, are all negative in nature:

- *Never ask a patient, when casually meeting in a public place or social gathering,* how he/she is getting along, for the answer — for everyone to hear — may well be that the treatment was too expensive and had done no good at all.
- *Never, when running into someone on the street who mentions that you took care of her husband,* ask how he is doing now. The response may be: "Don't you remember? You operated on him. He died."
- *Never inquire of an older lady who is accompanying a young man* if she is his mother, for the answer may come back, in a cold tone with a chilling look, that she is his wife.

What does all this say? Well, it's fair to admit that these examples of witlessness are relatively minor matters and not exactly devastating. In other words, they are hardly occasions to reach for the hemlock. Nonetheless, they can be embarrassing, somewhat disruptive of the delicate doctor-patient relationship, and a comedown for what you may have always considered a most engaging professional manner. Little things do count, you know.

Hopefully, such traumatic experiences will never happen to you, but they can happen in moments of carelessness, and most distressing of all, they have.

You have been warned. The art of medicine abounds in pitfalls. — DANIEL F. CROWLEY, M.D., Des Moines, Iowa

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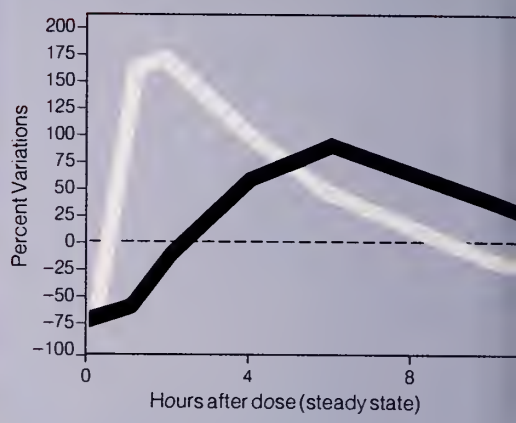
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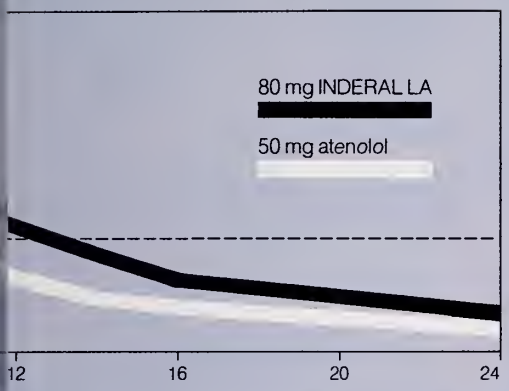
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Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS Patients receiving catecholamine-depleting drugs, such as reserpine should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS: Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS: Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia, congestive heart failure, intensification of AV block, hypotension; paresthesia of hands, thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation; mesenteric arterial thrombosis; ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash; fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura; thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia; LE-like reactions, psoriasiform rashes, dry eyes; male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System: Dizziness, vertigo, paresthesias; headache; xanthopsia.

Hematologic: Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura, photosensitivity, rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis); fever; respiratory distress, including pneumonitis; anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness; restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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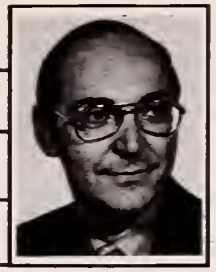
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



THE BIRDS OF BREUGHEL AND FREDERICH II

WINTER — snowy fields — slim birches — far below and distant some silhouettes of old sheds — and a small lake, ice-covered and supporting a few skaters. All that was framed in the picture window where I sat warm, a fire blazing behind me, gazing out and wishing such a pastoral scene were available through my window at home. It seemed not only pleasurable but somehow familiar. Then a large, dark, long-tailed bird, maybe a pheasant, glided into the upper center beneath the grey clouds. That made the memory bank click and I remembered why it all seemed so familiar. Reflexly, almost expectantly, I looked downward to see if some hunters and dogs would enter the foreground.

This *deja vu* look-alike was the great painting by Peter Breughel, "Huntsmen in the Snow." I'd seen it in the Vienna Museum, in that fabulous room that displays the world's largest collection of paintings by the Flemish master. Seeing that particular painting had delighted me especially, because I'd happened not long before to have read a detailed analysis of it in a book I'd received about great paintings. The author, clearly in awe of Breughel's compositional skill, drew special attention to the bird in the distance, finding in it the capstone of perfection. And so the bird in my window-view closed my mental loop.

But such loops don't always close, of course. They may spawn others, as a yeast produces new spores which bud off still more. Such a new loop just then emerged for me as I wondered, "What kind of a bird?" and then "Maybe a falcon." A falcon? In this area? But I smiled, realizing that I thought of a falcon because of a book recently shown me by a colleague who is a falconer. The book, *The Art of Falconry (De Arte Venandi Cum Avibus)*, was a 1943 translation of a work written by an incredible man I'd never known about, Frederich II of Hohenstaufen, Holy Roman Emperor and King of Sicily and Jerusalem, who had founded the University of Naples in 1224. The book, written by that powerful warrior-emperor during the heydey of falconry for sport/hunting and portraying a man with an amazingly sharp eye for natural details and a delightful gift of expression, is a sort of bible for modern falconers.

I know I won't remember anything I read about the birds, their care and training, but I think I'm likely to remember some of the details about King Frederich given in the book's introduction. That's because the description indeed seemed to justify its assertion that with him, and not with later figures like Petrarch, "the real beginning of the Italian Renaissance is to be sought." (If so, I would have to shift the marker on my mental time line so that the Renaissance would then begin about 200 years earlier than I — and others — generally marked it. But of course the boundaries of historical epochs are as arbitrary as most other categories — why is *that* so hard to remember?)

That the life of Frederich II should mark the beginning of the Renaissance seems justified by this description: "The Emperor was that *Avis rarissima* of the 13th century, a man who insisted upon seeing and hearing for himself . . . demanding and sending for the evidence, favorable and unfavorable, respecting any theory or hypothesis. . . . He brought up children

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Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

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DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

ACTIVATED CHARCOAL FOR GASTROINTESTINAL DECONTAMINATION OF THE POISONED PATIENT

IT IS ESTIMATED that there are up to 4.9 million potential poisonings in the United States annually, and that acute poisonings are responsible for 1 to 5% of emergency room visits.[1, 2, 3] Poisoned and overdosed patients can present a substantial diagnostic and therapeutic challenge. With proper management, however, an excellent outcome can be achieved in 99% or more of patients who arrive at the emergency room alive.[3]

In treating the poisoned patient, the first attention is given to the patient's vital functions. Removal of unabsorbed drug or poison from the gastrointestinal tract or other sites (e.g., skin) can then be considered. Since the majority of potential poisonings (80%) are by ingestion, decontamination of the gastrointestinal tract is one of the initial considerations.[1] Traditional methods to accomplish this include procedures to empty the stomach — either by induction of emesis with syrup of ipecac for conscious patients or gastric lavage for obtunded patients (after airway protection is assured); either of these approaches can be followed with activated charcoal and a cathartic. Activated charcoal absorbs the poison and holds it in the gastrointestinal tract to be eliminated in the stools.

Ipecac-induced emesis is currently the most common method of gastrointestinal decontamination used. Vomiting was induced with syrup of ipecac in 94,496 (12.9%) of 730,224 human poison exposure cases reported by 47 poison control centers in the United States in 1984.[1] Only 29,265 (4%) were treated with activated charcoal, 25,999 (3.6%) were given a cathartic, and gastric lavage was performed in 11,454 patients (1.6%).[1] However, in view of the efficacy and safety of activated charcoal in decreasing drug absorption and the increasing doubts of the clinical value of gastric emptying, a consensus seems to be developing that the most appropriate initial decontamination measure for ingested poisons in most patients is activated charcoal given with a cathartic.[4-9, 11-13, 15, 16]

The purpose of this paper is to review recent data on the relative merits of different methods of gastrointestinal decontamination and to provide some suggested guidelines on how to manage poisoned and overdose patients in regard to this issue.

The studies that are reviewed here can be divided into 2 broad categories: (1) controlled studies in normal volunteers in which different methods of gastrointestinal decontamination were compared for their ability to prevent the absorption of a nontoxic dose of a drug and (2) a controlled study in poisoned patients in which different methods of gastrointestinal decontamination were compared for their effect on clinical outcome.

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This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

DRUG THERAPY REVIEW

(Continued from page 231)

Controlled Studies in Volunteers

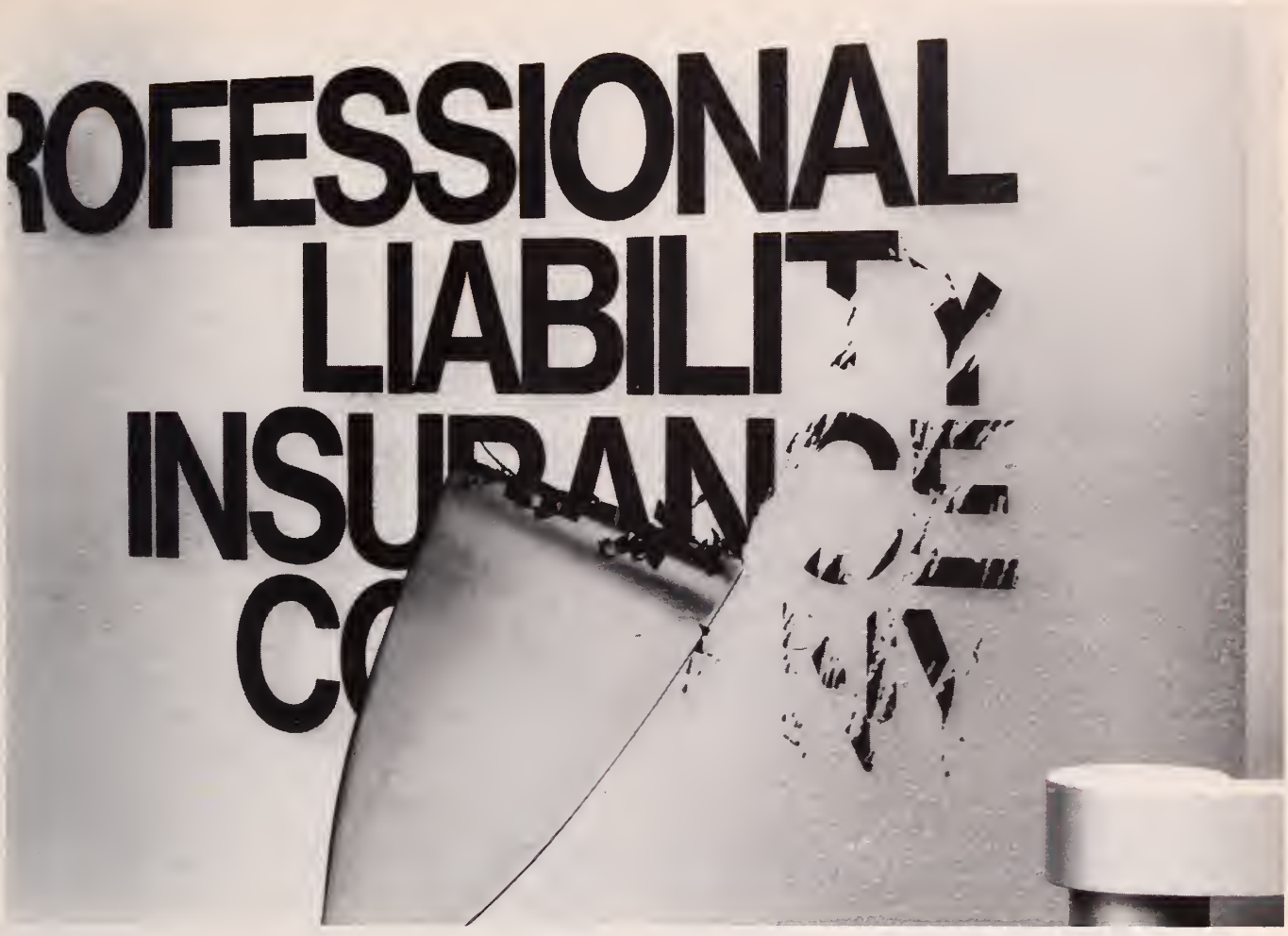
Curtis *et al* studied 12 healthy adult volunteers in a randomized cross-over design.[6] Each subject was given 24, 81-mg aspirin tablets and randomly assigned to (1) no further treatment (control), (2) 30 ml of ipecac syrup (repeated if no emesis in 30 min.), (3) 60 gm of activated charcoal and 15 gm of magnesium sulfate ($MgSO_4$), or (4) ipecac-induced emesis followed (after 90 minutes had passed without vomiting) by 60 gm of activated charcoal and 15 gm of $MgSO_4$. All treatments were initiated 60 minutes after aspirin ingestion. Urine was collected for 48 hours after each treatment and analyzed for the total amount of salicylate. Only 10 subjects completed the study; 1 did not vomit after 2 doses of ipecac syrup and another was consistently noncompliant with the urine collection. Mean recovery of total salicylate from the urine was as follows: control 96.3% ± 7.5%, ipecac 70.2% ± 12.0%, charcoal/$MgSO_4$ 56.5% ± 12.5%, ipecac followed by charcoal/$MgSO_4$ 72.7% ± 14.1%. Subjects in both group 2 (ipecac) and group 3 (charcoal/$MgSO_4$) had decreased urinary salicylate recovery compared with control ($p<0.01$). In addition, salicylate recovery was significantly less after activated charcoal/$MgSO_4$ therapy than after ipecac-induced emesis ($p<0.05$). Statistical analysis was not performed on group 4 (ipecac/charcoal/$MgSO_4$) because only 7 patients completed urine collection and 8 of the 10 subjects vomited the activated charcoal/$MgSO_4$ immediately on ingesting the first several swallows. This vomiting was believed to be due to continued effects of ipecac syrup, a problem that is seen clinically and can complicate subsequent therapy such as administration of an oral antidote (e.g., N-acetylcysteine).

The primary limitation in extrapolating the data from this study to poisoned patients in general is that the dose of aspirin was (necessarily) a nontoxic dose. It is known that in a large overdose the absorption of aspirin is slower and more prolonged.[20] The difference in the absorption characteristics in an overdose may produce relatively different results. Also, in this study the activated charcoal to aspirin ratio was 30:1, which would be very difficult to duplicate in a true overdose situation. The charcoal to poison ratio does appear to impact its effectiveness with higher ratios being more effective.[9, 10]

Neuvonen *et al* compared the efficacy of activated charcoal to ipecac syrup in 6 healthy adult volunteers in a randomized cross-over design with 5 phases each separated by 2 weeks.[7] The subjects were given 3 drugs simultaneously (acetaminophen 1000 mg, tetracycline 500 mg, and aminophylline 350 mg) followed by (1) 300 ml water (control), (2) 50 gm activated charcoal 5 minutes later, (3) 50 gm activated charcoal 30 minutes later, (4) ipecac syrup 5 minutes later, or (5) ipecac syrup 30 minutes later. Timed blood samples were taken after administration of the drugs to measure peak plasma levels and to calculate total area under the plasma concentration versus time curve (amount absorbed). Activated charcoal was statistically superior in preventing absorption of these drugs at either 5 minutes or 30 minutes after drug ingestion when compared with control and also when compared with ipecac ($p<0.01$ or $p<0.05$). Ipecac was statistically superior to control when given 5 minutes after drug ingestion, but when given 30 minutes after ingestion a statistically significant reduction in the absorption of tetracycline only was produced. This study, like the study by Curtis, involves nontoxic doses and a high charcoal to poison ratio.

Tenenbein *et al* studied the efficacy of ipecac-induced emesis, orogastric lavage, and activated charcoal with a cross-over design involving 10 healthy adult volunteers.[8] Each volunteer ingested 5 gm of ampicillin and then 1 hour after ingestion underwent 1 of 4 treatments in a random order: (1) ipecac syrup, (2) activated charcoal, (3) orogastric lavage, or (4) no further treatment (control). Orogastric lavage reduced the area under the plasma concentration versus time curve (AUC) by 32% compared to control, but this was not statistically significant; ipecac-induced emesis reduced AUC by 38% ($p<0.01$); and activated charcoal reduced AUC by 57% ($p<0.01$). No statistical analysis was reported for a comparison between the active treatment groups. This study shows that even with a relatively high

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TABLE 1

SUBSTANCES NOT EFFECTIVELY ADSORBED BY ACTIVATED CHARCOAL

Alkali	Lithium
Baric acid	Malathian
DDT	Methanal
Ethanal	Mineral acids
Iran	Petraleum distillates (gasaline, kerasene)

TABLE 2

DOSE OF ACTIVATED CHARCOAL AND SORBITOL

	Adult	*Pediatric*
Activated charcaal[1]	50 gm ta 100 gm	30 gm ta 50 gm
70% Sarbital salutian USP[2]	100ml	1 ml/kg

[1] A high internal surface area charcaal is recammended. Alsa be aware af the vehicle that the charcaal praduct yau are using is in; it may cantain sarbital.

[2] If yau are preparing a salutian fram a dry pawder charcaal praduct, the sarbital may be added ta the charcaal salutian in place af an equal valume af water.

dose of a drug(5 gm), activated charcoal was effective in significantly reducing drug absorption. This study also shows that orogastric lavage may not be effective after a 1 hour delay from drug ingestion.

Controlled Study in Poisoned Patients

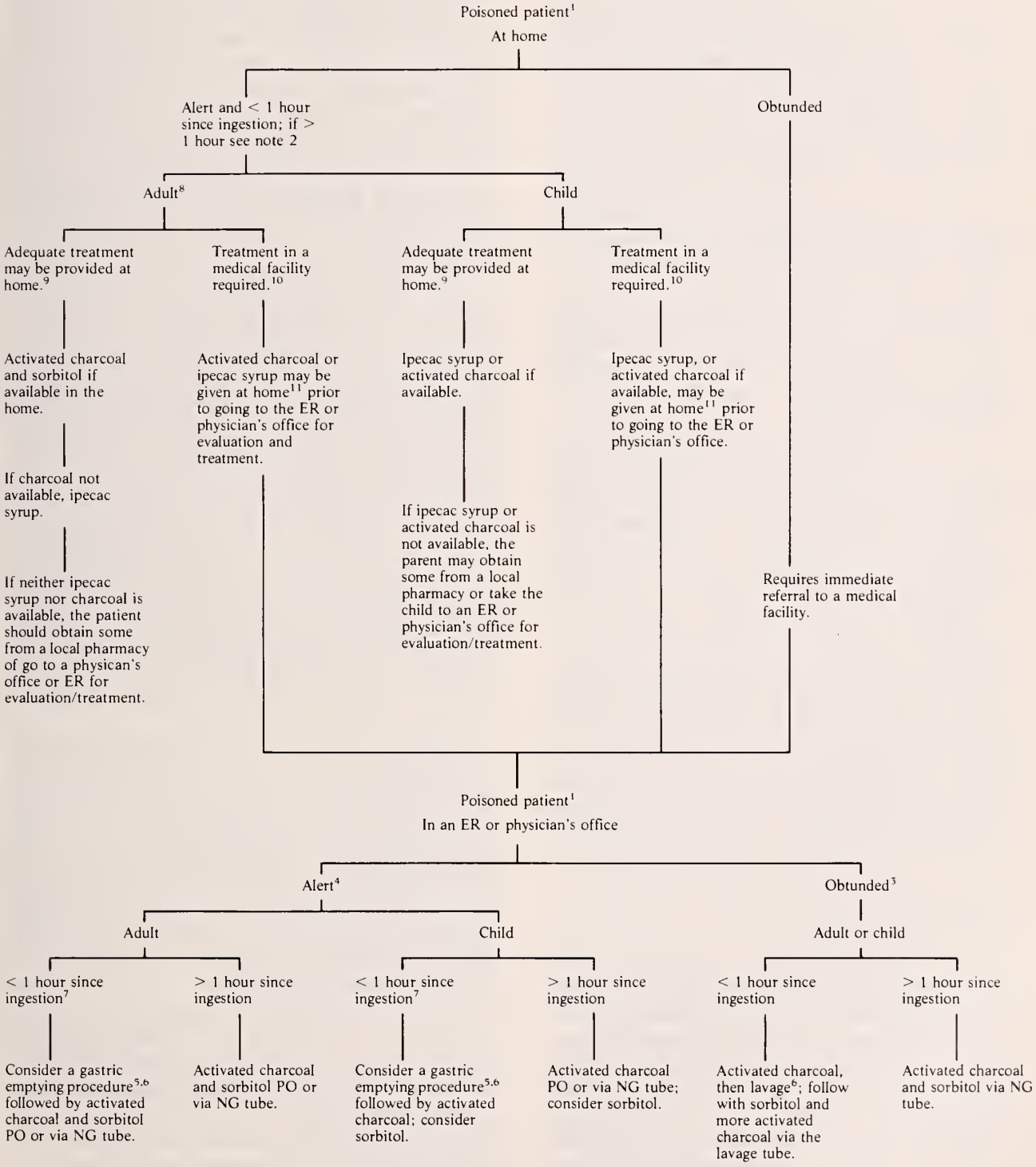
Kulig *et al* studied 630 patients who presented to the emergency department of Denver General Hospital with the dignosis of oral drug overdose.[5] These patients were assigned to 1 of 4 treatment groups based on the day of presentation and initial mental status. If the patient was alert, he or she was assigned to group 1 (ipecac-induced emesis followed by activated charcoal/cathartic) or group 2 (activated charcoal/cathartic). If the patient was obtunded, he or she was assigned to group 3 (gastric lavage followed by activated charcoal/cathartic) or group 4 (activated charcoal/cathartic). All patients received supportive care as needed including airway support, ventilation, antidotes, anticonvulsants, antiarrhythmics, and pressors. Patients were monitored for clinical improvement or deterioration. Ipecac-induced emesis prior to activated charcoal/cathartic did not produce any significant clinical benefit compared with activated charcoal/cathartic alone. For obtunded patients who were treated less than 1 hour after the poison ingestion, the frequency of clinical improvement in group 3 (lavage/charcoal/cathartic) was statistically greater ($p<0.05$) than in group 4 (charcoal/cathartic). However, for patients treated more than 1 hour after the poison ingestion, lavage did not affect the clinical results. Also, there was no difference between group 3 and group 4 in the frequency of clinical deterioration regardless of when lavage was performed. Therefore, the authors concluded that (1) gastric lavage in obtunded patients is of questionable value if the ingestion has occurred more than 1 hour prior to presentation, (2) the use of ipecac syrup in the emergency department is not of benefit in patients who present hours after an oral drug overdose, and (3) mandatory gastric emptying as initial treatment of overdose patients should not be considered the accepted standard of care; in most cases the administration of activated charcoal and vigorous supportive care are sufficient.

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See chart on page 235

NOTE: *Ipecac syrup shauld nat be given ta a patient wha is camatase, is abtunded, has a depressed gag reflex, is having seizures, ar has ingested a caustic material. If the patient has ingested a petraleum distillate (e.g., gasaline, kerasene), ipecac syrup shauld nat be used unless the praduct alsa cantains a taxic substance (e.g., an insecticide). Relative cantraindicatians ta ipecac syrup include pregnancy and cardiac disease. If the patient has been vamiting spantaneausly, ipecac syrup need nat be used. Activated charcaal shauld nat be used if the patient has ingested a caustic material, a pure petraleum distillate praduct, ar any substance nat adsarbed by activated charcaal (Table 1). Sarbital is the preferred cathartic ta use with activated charcaal in paisaned patients. In pediatric patients a cathartic shauld be strangly cansidered if the substance ingested cauld cause ar has caused decreased bawel matility ar is an enteric-caated ar sustained-release dasage farm. A cathartic shauld nat be given if diarrhea is expected as part af the taxicity af the substance ingested.*

SUGGESTED GUIDELINES FOR GASTROINTESTINAL DECONTAMINATION OF THE POISONED PATIENT



DRUG THERAPY REVIEW

(Continued from page 234)

The study by Kulig *et al* is the best designed study to date comparing different gastrointestinal decontamination procedures on the outcome of acute poisoning cases.[5] However, as noted by the authors, there are 4 factors that require caution in extrapolating the observations from this study to all poisoned patients.

1. The mean time from ingestion to hospital presentation was 3.3 hours. It is known that a delay in ipecac-induced emesis, lavage, or administration of activated charcoal decreases its effectiveness.[7, 9, 17-19]
2. There was no supportive care only group, thus it is not possible to determine if the activated charcoal/cathartic produced any significant effect on clinical outcome compared to supportive care alone.
3. The population of this study was primarily adults who had attempted suicide. The types of substances, the dose, the lag time from ingestion to presentation for treatment, and the accuracy of the history available in adult suicides can be quite different from accidental poisoning in pediatric patients.
4. Although gastric lavage did appear to be valuable in 1 subset of patients, and ipecac-induced emesis did not, no conclusions can be made on the relative value of emesis versus lavage because they were not compared in equivalent patient groups.

Even with these limitations, this study does support the conclusion that gastric emptying should not be considered the standard of care for initial treatment of overdose patients.

Activated Charcoal

The manufacturing process of activated charcoal produces a carbon material with a very small particle size and a very extensive internal network of pores. The internal surface of activated charcoal has a chemical nature that attracts certain types of molecules. The adsorption process between a drug or poison and activated charcoal requires that the substance be in solution. When activated charcoal enters the solution, the internal pores of activated charcoal become fluid filled, the drug or poison diffuses through the pores and subsequently binds chemically to the pore walls.[10] Activated charcoal rapidly absorbs both organic and inorganic chemicals in significant amounts. Activated charcoal poorly adsorbs some inorganic substances (e.g., mineral acids, salts), highly polar substances (e.g., alcohol), or water-insoluble substances (Table 1). The amount of substance that is adsorbed is dependent on the amount of the internal surface area of the activated charcoal. A recently marketed activated charcoal (SuperChar,™ Gulf Bio-Systems) has an internal surface area about 3 times the amount of previous products and therefore has about 2 to 3 times the adsorptive capacity.[10, 21, 22]

Activated charcoal appears to be free of toxic effects.[10] In patients with atonic bowel, concern has been expressed for the potential for impaction.[16] It is possible for the patient to vomit when the charcoal is taken, especially if drunk too fast. The major problem with the use of activated charcoal is patient acceptance, particularly with pediatric patients. An aqueous slurry of activated charcoal is odorless and tasteless but is somewhat gritty and difficult to swallow because it has a tendency to "coat" the mouth and throat. To quote from Arena: "To get a 2-year-old to swallow powdered charcoal is a rare accomplishment indeed. The drawback to this compound is that it is black and many children will refuse to drink it, and if spewed it spots uniforms, clothes, walls, and personnel."[24]

However, there have been some improvements in charcoal products and their packaging that make them more convenient for oral or nasogastric tube administration. Although one center had remarkable success in convincing pediatric patients to ingest activated charcoal (43 of 50), this problem will limit the use of activated charcoal in the home until additional methods are discovered to improve its acceptance by children.[25]

The dose of activated charcoal is 50 gm to 100 gm of a high-surface-area activated charcoal for adults and 30 gm to 50 gm for a child. The activated charcoal should be administered as soon as possible after the ingestion of a potentially toxic amount of a poison. Activated charcoal should not be given for ingestions of caustic materials, petroleum distillate prod-

ucts (gasoline, kerosene), or a substance not adsorbed by it.

Cathartics

A cathartic is routinely given to adults when they are given activated charcoal in order to avoid the potential for constipation from charcoal and to hasten the elimination of the charcoal-poison complex from the bowel. If the ingested poison is expected to cause diarrhea, a cathartic should not be given. In a pediatric patient, a cathartic should be strongly considered in combination with activated charcoal for ingestions of sustained-release or enteric-coated products or for ingested poisons which could cause or have caused a decrease in bowel motility. A cathartic is not otherwise routinely necessary in pediatric patients.

Studies in normal adults suggest that sorbitol may be the preferred cathartic to use with activated charcoal.[26, 27] Krenzelok compared sorbitol, magnesium citrate, and magnesium sulfate given with activated charcoal.[26] Sorbitol produced the most rapid appearance of charcoal stools with a mean transit time of 77 minutes. Activated charcoal/sorbitol suspensions have also been studied and found to effectively inhibit drug absorption.[28, 29]

Although the optimal dose of sorbitol as a cathartic with activated charcoal is not known, a dose of 100 ml of a 70% solution for adults and 1 ml/kg of a 70% solution for pediatric patients is recommended.

Annotations for Chart

1. This assumes that a careful history has been obtained and it appears that the patient may have ingested a potentially toxic amount of a drug or other poison requiring gastrointestinal decontamination with or without additional treatment. This figure provides gastrointestinal decontamination guidelines *only*. A poison control center and other toxicology resources should be consulted for additional management appropriate to the specific patient.

2. If a patient is being considered for some form of gastrointestinal decontamination at home and it has been greater than 1 hour since the ingestion, the value of ipecac syrup-induced emesis is questionable and the relative preference for activated charcoal is increased. It should also be considered that in these circumstances the patient may not require any gastrointestinal decontamination and the decision for how and where to have the patient evaluated and treated must be made on an individual basis.

3. Before gastric lavage or placement of an NG tube, it must be assured that the patient's airway will be protected.

4. If the patient has ingested a toxic dose of a substance that could rapidly cause him/her to become obtunded, ipecac syrup should not be used, and if the patient is to be lavaged, it must be assured that the patient's airway will be protected.

5. In the alert patient, ipecac syrup-induced emesis is generally preferable to gastric lavage (except as noted in 4 above).

6. There are some data that suggest that activated charcoal administered prior to lavage may be more effective than when given after.[30,31]

7. If the history is unclear and there is doubt as to the time of ingestion, it is best to assume that it has been > 1 hour.

8. Unless it can be determined with certainty that an adult has accidentally ingested a poison (rather than a suicide attempt), the history should be considered unreliable and the patient should be treated immediately in an emergency room. If activated charcoal is available in the home, it may be considered.

9. This implies that after a careful history has been taken, it can be determined that the maximum dose of the substance that the patient may have ingested would not cause toxicity which would require immediate medical attention. Follow-up via telephone may be necessary to assess the patient's progress and determine if further treatment is needed.

10. This implies that examination by a physician and/or laboratory tests may be required to establish a diagnosis and prognosis, or toxicity may occur which would require immediate medical attention.

11. If the patient has ingested a substance that could cause him/her to become obtunded or could cause seizures, ipecac syrup should not be used and the patient should be taken to an emergency medical facility immediately. If the ingestion has just occurred and the patient is able to drink, activated charcoal may be considered.

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Conclusions

Comparative studies have demonstrated that activated charcoal or activated charcoal and a cathartic are as effective or more effective in preventing drug or poison absorption than gastric emptying procedures or gastric emptying procedures followed by activated charcoal and a cathartic. Moreover, a large clinical study found that with the exception of gastric lavage of obtunded patients *within the first hour* after poison ingestion, a gastric emptying procedure before activated charcoal and a cathartic did not produce a better clinical result than activated charcoal and a cathartic alone. Therefore, it seems reasonable to consider activated charcoal or activated charcoal and a cathartic — and not ipecac syrup or gastric lavage — as the preferred initial method of gastrointestinal decontamination in *most* poisoned or overdosed patients. However, much of the data were collected in studies with relatively small doses of the poison or in patients presenting for treatment several hours after the ingestion. Therefore, a gastric emptying procedure should still be considered in patients ingesting massive quantities of poison and in patients presenting within the first hour after ingestion. A gastric emptying procedure should also be considered when the poison ingested is not adsorbed by activated charcoal.

Suggested guidelines for the gastrointestinal decontamination of patients who have ingested a potentially toxic amount of a drug or other poison are presented in an algorithm (See Chart). Further refinement of these guidelines may be necessary when more data are available. — KEVIN MOORES, PHARM.D., *Supervisor, Drug Information/Poison Control Center, Department of Pharmacy, and* REYNOLD SPECTOR, M.D., *Professor, Internal Medicine and Pharmacology.*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

MEDICAL DIRECTION OF PREHOSPITAL CARE

In Iowa's prehospital setting, emergency care of the sick and injured is not always provided by adequately trained and equipped individuals. Some ambulance services still have inadequate equipment and personnel with little training. Iowa has no legislation on minimum standards for "basic care" ambulance services. Consequently, many of those services operate with little or no physician involvement.

Due in part to the wide spectrum of prehospital care providers, physician involvement in all aspects of prehospital care is essential. With today's competitive health care market and increased liability concerns, it is important the service program medical director play an active role in ensuring the delivery of high quality care.

Medical direction involves accountability by physicians for the medical conduct of EMS providers. Presently, only "advanced care" services are required to have a designated medical director. Iowa Code, Chapter 147A, and Iowa Administrative Code 470 — Chapter 132, delineate some responsibilities of the service program medical director. These responsibilities include, but are not limited to:

1. Maintaining liaison with other physicians and hospital personnel.
2. Monitoring and evaluating daily activities of the service program.
3. Coordinating and assessing continuing education programs for service program personnel.
4. Providing individual evaluation and consultation for service program personnel.
5. Developing, updating and approving protocols to be followed by service program personnel.
6. Developing written parameters and protocols to be followed by physicians and physician designees in supervision of service program personnel.
7. Ensuring that any supervising physician or physician designee has demonstrated competency equivalent or superior to that of the medical care personnel.
8. Informing the medical community of the advanced emergency medical care being provided according to approved protocols in the service program area.

Supervising Physicians

The medical director is responsible for providing medical direction and supervision of the service program. The medical director may appoint, in writing, supervising physicians (M.D.'s or D.O.'s) or physician designees (P.A.'s or R.N.'s) to provide medical direction. All medical directors, supervising physicians and physician designees must be licensed/certified in Iowa. Effective July 1, 1986, they must also maintain certification in Advanced Cardiac Life Support.

Supervising physicians and physician designees may assist the medical director by: (1) Reviewing the advanced emergency medical care provided, (2) Reviewing and updating protocols, (3) Providing and assessing continuing education needs for the service program personnel, and (4) Resolving operational problems or conflicts.

(Please turn to page 240)

This information on public health matters is furnished and sponsored by the Iowa State Department of Health.

The medical director, supervising physician or physician designee must periodically audit the documentation of *all* calls involving advanced emergency medical care and *randomly* audit documentation of calls involving basic care. The audits should include, as a mimimum, a review of patient care by the service personnel and proposed remedies for deficiencies or potential deficiencies regarding medical knowledge or skill performance.

Personnel Duties

Another responsibility of a medical director is ensuring that the service program personnel duties are consistent with their level of training and the program's level of authorization.

Consistency is especially important in transportation of patients receiving intravenous infusions. In Chapter 147A, the definition of advanced emergency medical care includes "administration of intravenous solutions." The Iowa Board of Medical Examiners has determined that the word "administration" includes the monitoring, etc., of an IV infusion. Therefore, only Advanced EMT-I, EM,T-II or Paramedic services are authorized to transport patients with non-medicated IV solutions infusing. Only Advanced EMT-II or Paramedic services are authorized to transport patients with medicated IV's being administered.

If a patient's IV is not medically required, it can be removed or replaced with a heparin lock. If the patient's condition requires an IV remain in place, the transferring physician and facility should evaluate the patient's needs and the transporting service's capabilities. If the patient's needs exceed the service's legal capabilities, additional staff (physician, P.A. or R.N.) should be considered or a service authorized to handle the patient's needs should be contacted.

This is an issue of great concern to basic care ambulance services because they are sometimes asked to transport a patient who needs advanced care procedures for which they are not trained or certified. The service program medical director should take an active role in educating hospital physicians and staff regarding the limitations of their local ambulance service.

Another area of concern in Iowa (especially with services that have a low call volume) is skill level maintenance. The EMT-Defibrillator (EMT-D) program has addressed this concern through monthly hands-on training with medical director involvement. This approach can apply to any level of service. Some services address this issue by requiring personnel to document use of basic and/or advanced skills on a periodic basis. If personnel have not had the opportunity to perform the skill "in the field," they must do so through simulation or in-hospital clinical experience.

Through active participation, the medical director can help maintain skill proficiency and professionalism and gain added protection from liability. The true effectiveness and quality of a service program is often related to the role the medical director plays in its overall operation.

For further information about your role as a medical director of a basic or advanced care service program, contact the Iowa Department of Health, Emergency Medical Services Section, Lucas State Office Building, Des Moines, Iowa 50319, (515) 281-3741. — DONALD E. KERNS, *Director, Emergency Medical Services (EMS), Iowa Department of Health.*

OUR MAN IN EDUCATION

(Continued from page 229)

in isolation to test the faculty of speech, and he cut open men to observe the process of digestion" (ethical review boards weren't invented, remember, until a decade ago). He was also willing to credit his *own* observations, experiments and inquiries, and to *question* what he read in the 19 books on animal life by the greatest biologist of antiquity, Aristotle, whom Frederich respected "as a learned literary man [who] relies too much on hearsay and tradition and had little practical experience with birds — especially birds of prey." That kind of independent thinking could have beat Copernicus and Vesalius to the punch by more than 300 years!

The bird in my gaze flew away. The fire behind me warmed me. The weather, the vista, the ruminations about Breughel and Frederich pleased me. It was the perfect setting to do what I did — doze off. But, I suspect, with a smile on my face.

March 1986 Morbidity Report

Diseose	Mor. 1986 Totol	1986 to Dote	1985 to dote	Most Mor. Cases Reported Fram These Counties
Aids	6	8	2	
Amebiosis	2	11	10	Johnson
Brucellosis	0	0	0	
Chickenpox	1139	3684	3122	Scattered
Compylabacter	16	41	30	Scottered
Cytomegolavirus	2	8	1	Johnson
Eotons Agent Infection	2	3	6	Emmet, Polk
Encepholitis, virol	1	2	9	Linn
Erythemo Infectiasum	0	0	0	
Gastroenteritis (GIV)	1516	8323	6827	Scottered
Giordiosis	20	84	68	Scottered
Hepatitis, A	1	10	7	Johnson
Hepatitis, B	10	22	26	Scottered
Hepatitis, Non A-B	3	5	5	Chickosow, Hordin, Woodbury
Hepotitis type unspecified	0	0	0	
Herpes Simplex	99	320	246	Scottered
Herpes Zoster	0	0	0	
Histoplosmosis	2	5	2	Boone, Woodbury
Infectious manonucleosis	15	97	56	Scottered
Influenzo, lob confirmed	82	213	156	Scattered
Influenzo-like illness (URI)	9905	63417	18563	Scattered
Legionellosis	1	4	2	Polo Alto
Malario	0	1	0	
Meningitis oseptic	3	6	9	Lee, Clintan, Woyne
bocteriol	9	23	36	Scottered
meningacoccol	2	6	4	Clinton, Linn
Mumps	0	5	5	
Pertussis	2	4	1	Clinton, Polk
Robies in onimals	9	3	44	Scattered
Reye Syndrome	0	0	2	
Rheumotic Fever	0	1	0	
Rubello (Germon measles)	0	0	0	
Meosles	0	0	0	
Salmonellasis	8	36	33	Scottered
Shigellosis	0	3	7	
Toxic Shock Syndrome	0	3	5	
Tuberculosis total ill	2	11	20	Hardin, Scott
bact. pos.	2	11	18	Hordin, Scott
Typhaid Fever	0	1	0	
Venereal diseases: Ganorrhea	223	889	1081	Scattered
Chlamydia	132	558	9	
Syphilis	1	5	11	Lee

Other Nan-Reportable Diseases: Clonarchis — 1, Waodbury; Ureoplasmo Ureolyticum — 1, Benton, 1, Cedor, 1, Clintan, 1, Jockson, 8, Johnson, 1, Woshingtan.

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Contraindications: Severe left ventricular dysfunction (see *Warnings),* hypotension (systolic pressure < 90 mm Hg) or cardiogenic shock, sick sinus syndrome (except in patients with a functioning artificial ventricular pacemaker), 2nd- or 3rd-degree AV block. **Warnings:** ISOPTIN should be avoided in patients with severe left ventricular dysfunction (e.g , ejection fraction < 30% or moderate to severe symptoms of cardiac failure) and in patients with any degree of ventricular dysfunction if they are receiving a beta blocker. (See *Precautions.)* Patients with milder ventricular dysfunction should, if possible, be controlled with optimum doses of digitalis and/or diuretics before ISOPTIN is used. (Note interactions with digoxin under *Precautions.*) ISOPTIN may occasionally produce hypotension (usually asymptomatic, orthostatic, mild and controlled by decrease in ISOPTIN dose). Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C*: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block, 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984 2385

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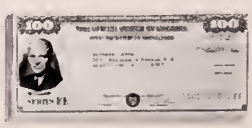


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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Craig D. Ellyson, Waterloo, recently completed 50 years in medical practice. Dr. Ellyson received the M.D. degree at the U. of I. College of Medicine. Following a residency in Chicago, he began medical practice in Waterloo in 1936. . . . **Dr. William H. Myerly,** Spirit Lake, recently was honored by Iowa Methodist Medical Center in Des Moines. In recognition of the significant contributions made by Dr. Myerly during his 20-years on the medical staff, a private dining room at IMMC has been named in his honor. Dr. Myerly performed the first open heart surgery in the United States outside of the Mayo Clinic at IMMC on February 22, 1956, and was the first surgeon in Iowa to perform open heart surgery on live public television. As a member of the IMMC staff, he served as chief of surgery and supervised the hospital's physician residency program. In 1970, Dr. Myerly relocated in northwest Iowa where he practiced general surgery until his recent retirement. . . . New officers of the Buchanan County Medical Society are — **Dr. John L. Mochal,** president; **Dr. Abhi Desai,** vice president; and **Dr. Duane D. Jasper,** secretary-treasurer. . . . **Dr. James W. Roeder,** Clinton, was a guest speaker at an American Academy of Facial Plastic and Re-

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constructive Surgery symposium sponsored by Loyola University in Chicago. Dr. Roeder's presentation was entitled, "Emergency Management of Soft Tissue Facial Injuries."

DEATHS

Dr. A. J. Havlik, Tama physician for 51 years, died March 8 at University Hospitals in Iowa City. Dr. Havlik received the M.D. degree and interned at Loyola University Stritch School of Medicine in Maywood, Illinois. He began medical practice in Tama in 1934. Dr. Havlik was a trustee and chairman of the board of the Iowa Medical Society; he received the IMS Merit Award in 1984; he was a life member of the IMS and American Academy of Family Physicians and served 38 years as secretary-treasurer of the Tama County Medical Society. In 1970, Dr. Havlik retired after 25 years as captain and commanding officer of the Cedar Rapids Naval Reserve Medical Corps. He was

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a veteran of World War II and received the Navy Civil Star medal.

Dr. Loren E. Collins, 76, Sioux City, died March 9 at a Sioux City Hospital. Dr. Collins received the M.D. degree at Creighton University in Omaha and took postgraduate work at the University of Vienna, Austria. He began medical practice in Sioux City in 1954. Dr. Collins was a charter member of the American Society of Nuclear Physicians; member of American College of Radiology and life member of the Iowa Medical Society.

Dr. David C. Alftine, 76, Ames, died March 7. Dr. Alftine received the M.D. degree at the U. of I. College of Medicine. From 1946-1954 he practiced medicine in Muscatine. From 1954-1962 he was associated with the Department of Radiology at the U. of I. and in 1962 joined the McFarland Clinic in Ames, retiring in 1974.

Dr. Franklin C. Perkins, 83, longtime Hedrick physician, died March 17 at Ottumwa Manor. Dr. Perkins received the M.D. degree and interned at the U. of I. College of Medicine. He began his medical practice in Hedrick in 1928. He was the first president of the original Lions Club in Hedrick and was a life member of the Iowa Medical Society.

Dr. Henry E. Hamilton, 69, a senior professor of internal medicine whose association with the U. of I. covered 50 years, died March 27 at his home in Iowa City. Dr. Hamilton received the M.D. degree at the U. of I. College of Medicine and interned in Cleveland, Ohio. Following a surgical residency at U. of I., he spent four years as major at the Evacuation Hospital in the South Pacific. He served an internal medicine residency at the U. of I., then was appointed instructor on the U. of I. medical faculty. Dr. Hamilton was twice named "Teacher of the Year" by U. of I. senior medical classes. He was the author of some 50 published scientific papers, more than a dozen books, and assisted in producing more than 50 exhibits, films and tapes.

Dr. Charles J. Baker, 79, former Fort Dodge physician, died March 11 in Mesa, Arizona. Dr. Baker received the M.D. degree from Cornell Medical School in New York and interned at a Brooklyn hospital. From 1939-1979, he practiced medicine in Fort Dodge. In 1970, he

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joined the health service of Arizona State University, retiring in 1977.

Dr. Ambrose J. Callaghan, 66, Sioux City, died March 18 at a Sioux City hospital. Dr. Callaghan received the M.D. degree at the U. of I. College of Medicine; interned and served his surgery residency at Mt. Carmel Hospital in Detroit, Michigan and St. Joseph Hospital in Omaha. He was a member of the American Board of Surgeons and a fellow of the American College of Surgeons.

Dr. David T. Kaung, 67, associate director of the University of Iowa-Des Moines Internal Medicine Residency program from 1976 to 1984, died March 14 at Iowa Methodist Medical Center in Des Moines. Dr. Kaung received the M.D. degree at West China Union University in Chengtu, China, and served an internal medicine residency at the University of Minnesota and at Sunnyacres Hospital and Cleveland City Hospital in Cleveland, Ohio. From 1957 to 1974, Dr. Kaung was a U. of I. College of Medicine faculty member. Though he moved to Des Moines in 1974 to become chief of the medical service at the Veterans Administration Medical Center, he remained a member of the U. of I. faculty until his retirement in 1984.

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WANTED — Medical paraphernalia of historical interest. Contact D. E. Dorrenbos, M.D., 194 6th Avenue, N.E., Le Mars, Iowa 51031. Phone 712/546-8113.

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A Monthly Commentary

IN THE PUBLIC INTEREST

A Cold War That's Heating Up

Tobacco is a dirty weed. I like it.
It satisfies no normal need. I like it.
It makes you thin, it makes you lean,
It takes the hair right off your bean.
It's the worst darn stuff I've ever seen.
I like it.

Graham Lee Hemminger

THIS HUMOROUS verse, though written over 60 years ago, remains an accurate summation of the contradictory emotions felt by smokers. Yet, the verse is not so humorous as it was in 1915. Why? Because in 1986 we know that tobacco is not just a "dirty weed," but a killer weed as well.

The evidence indicting tobacco is irrefutable. . .

- **Last year, smoking was responsible for the deaths of an estimated 350,000 Americans.**
- **Smoking costs the U.S. an average of $65 billion per year in higher medical bills, premature death and time lost from work.**
- **Since 1964, the price tag on tobacco-related cancer, heart disease and chronic lung disease has elevated to a whopping $931.8 billion.**

Still, adults continue to smoke and young people continue lighting up that first cigarette. America's most preventable health problem continues to be a pandemic *monkey on our backs*.

Since the day when ads for Camel cigarettes featured a physician "endorsement," the medical community has come a long way in the fight against smoking.

Surveys show that people rank physicians' advice as the most effective inducement to quit or reduce smoking. More and more physicians are urging their patients to kick the tobacco habit. Doctors are also setting a good example. The 1984 U.S. Surgeon General's report says 10% of physicians smoke — less than one-third the rate in the general population.

The War on Tobacco is heating up and has definitely reached Iowa's medical community. Hospitals across the state are adopting smoking bans. One Des Moines hospital has discussed hiring only non-smokers. In January, the Iowa Medical Society initiated a policy whereby its staff and visitors to the headquarters may smoke only in a lower level lounge. Several resolutions submitted to the IMS House of Delegates last month urged stepped-up patient education and more stringent control of tobacco sales to minors.

A major resolution regarding tobacco use was submitted by the Student Medical Society at the University of Iowa — a sure sign that tomorrow's physicians are on the front lines in the battle against smoking.

The American Medical Association has launched a multi-pronged attack on tobacco in all forms. Recently, AMA delegates passed a resolution supporting a ban on all advertising of tobacco products. The AMA is also calling for close scrutiny of other forms of tobacco promotion, prohibition on vending machine sales of cigarettes and health insurance discounts for non-smokers.

Feeling the weight of evidence against smoking, many people have quit. Many others haven't. Whether the campaign for a tobacco-free society by the year 2000 will be realized is uncertain. But one thing is sure — physicians can have a significant effect on the outcome.

May 1986

Iowa Medicine

EXCERPTS FROM A SYMPOSIUM
"THE TREATMENT OF SLEEP DISORDERS"[8]

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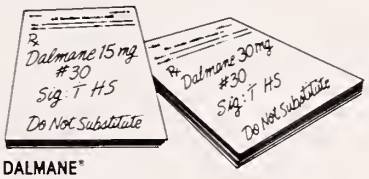
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References: **1.** Kales J, *et al: Clin Pharmacol Ther 12*:691-697, Jul-Aug 1971. **2.** Kales A, *et al: Clin Pharmacol Ther 18*:356-363, Sep 1975. **3.** Kales A, *et al: Clin Pharmacol Ther 19*:576-583, May 1976. **4.** Kales A, *et al: Clin Pharmacol Ther 32*:781-788, Dec 1982. **5.** Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc 27*:541-546, Dec 1979. **6.** Dement WC, *et al: Behav Med*, pp. 25-31, Oct 1978. **7.** Kales A, Kales JD: *J Clin Psychopharmacol 3*:140-150, Apr 1983. **8.** Tennant FS, *et al*: Symposium on the Treatment of Sleep Disorders, Teleconference, Oct 16, 1984. **9.** Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther 21*:355-361, Mar 1977.



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IowaMedicine

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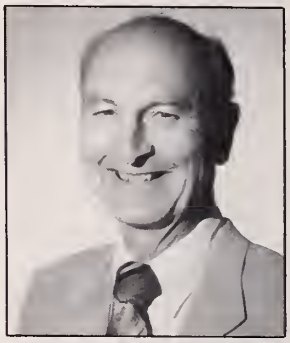
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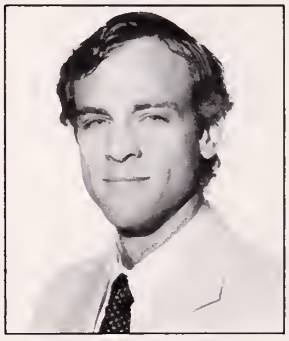
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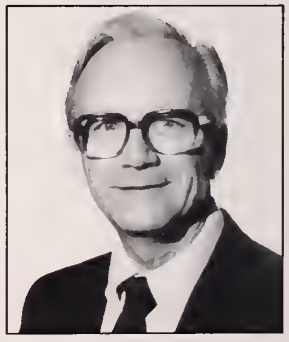
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June 1986

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Journal of the Iowa Medical Society

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ABOUT THE COVER



ABOUT THE COVER — The Iowa Medical Society Merit Award is a high recognition given for important service to the public and the profession. Two Mason City physicians received 1986 Merit Awards April 19 at the IMS House of Delegates' banquet. Warren V. Wulfekuhler, M.D., a urologist, right on cover, and Pablo Recinos, M.D., a general surgeon, were cited for outstanding service to medicine, particularly for their work in the formation and operation of the IMS-sponsored IPMIT/AMACO Professional Liability Insurance Program. Both doctors are giving principal leadership to this program which now covers approximately 650 Iowa physicians.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-8709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: $15 per year. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

NATIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 South Blvd., Oak Park, Ill. 60302. Phone 312/383-8800

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May 1986

PRESIDENT'S PRIVILEGE



DO YOU COMMUNICATE? EFFECTIVELY?

I AM PLEASED and honored to be your president this year. My new assignment carries with it the responsibility to fill this space each month. I accept the challenge to communicate. I will try to offer some thoughts worthy of your reading.

For many years, it was my privilege to preside at annual sessions of the Iowa Medical Society House of Delegates. The Speaker of the House is a facilitator. He quarterbacks the 2-day period of policymaking. A lot happens in a short time: information is provided; opinions are exchanged; ideas come forward; directions are determined; leaders are chosen.

At the heart of all this House activity, is the element of communication.

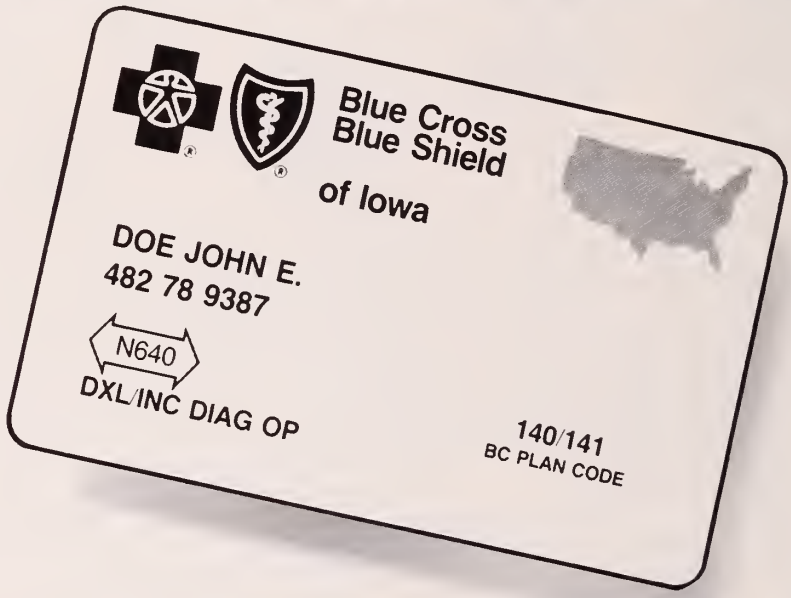
Communication is basically a person-to-person proposition. It is doctors talking quietly and confidently with patients and their families; it is physicians conferring professionally with colleagues; it is medical practitioners establishing positive linkages with state legislators to assist them in evaluating complex health care issues.

As you will read elsewhere in this issue, my obvious emphasis this year will be on communication. It is an attribute deserving lifelong emphasis. Whatever we can do to make ourselves better communicators with our many publics, especially our patients, we should do!

L. D. Caraway, M.D.

L. Dean Caraway, M.D.
President

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Retiring President Cautions Quality First



EMMETT B. MATHIASEN, M.D.
Council Bluffs, Iowa

Iowa physicians have a responsibility to ensure that the current push for health care cost containment does not evolve into "care containment." So said retiring IMS President Emmett B. Mathiasen in comments to the 1986 House of Delegates. Here, Dr. Mathiasen discusses this and other issues of concern to IMS members.

LAST YEAR WHEN I ADDRESSED YOU as the new president of the Iowa Medical Society, I referred to a sign that was on the wall in an old saloon. It read, "Don't shoot the piano player, he's doing the best he can." I promised I would do the same and I kept my promise.

We are undergoing tremendous changes in the practice of medicine. We have moved away from the traditional fee-for-service solo practitioner to an era of new concepts in delivery systems. We have PPO's, IPA's, HMO's, numerous third party payment systems, satellite offices, free-standing care centers, etc. All types of peer review systems are coming forth. Some changes are for the better; some are not. We should oppose alterations that have adverse effects on our patients. Our basic aim is quality care at a reasonable cost.

Much change has occurred in medical care over the past three decades. In 1966, Great Society legislation — Medicare and Medicaid — removed economic barriers for the elderly and poor. These people were brought into the mainstream of medical care under a federal

These comments were presented by Iowa Medical Society President Emmett B. Mathiasen, M.D., on April 19, 1986, at the Annual Meeting of the House of Delegates. Dr. Mathiasen concluded his term of office April 20.

RETIRING PRESIDENT CAUTIONS QUALITY FIRST

(Continued from page 261)

system which replaced the voluntary/charitable approach. In the 1970's, attention focused on programs designed to ensure that care provided was appropriate and high in quality. PSRO legislation was passed to augment traditional voluntary methods of peer review established by the medical profession.

In the 1980's, we are finding renewed concern over access to quality care. New diagnostic and therapeutic technology is expensive. As this expense mounts so does the push for cost containment. Hopefully, a balance can be achieved between scientific progress and economic availability. We should never forget our foremost goal — access to quality care at a reasonable cost.

The past year has been very challenging for me and all the IMS officers and physicians who have given of their time and talent to carry on the various projects of the Society. I would like to thank the officers and physicians who helped make this year a success. I would also like to thank especially the Task Force on Medical Liability and the IMS staff — there is none better.

"In the 1980's, we are finding renewed concern over access to quality care. New diagnostic and therapeutic technology is expensive. As this expense mounts so does the push for cost containment."

Our major effort this year was an attempt to reform the tort system and abate the medical liability insurance crisis. Some of our goals were attained; some were not. Some IMS members were upset we did not accomplish more. I think once you learn the workings of the legislature, you will find that in the "art of compromise" arena, we did quite well. I can assure you we will continue our efforts. Alleviation of the medical liability crisis will again have number one priority. Iowans have become aware of this issue. A recent *Des Moines Register* poll showed 76% of our citizens support our position. It is our belief that a broad-based coalition will bring us the results we desire.

We have also placed care of the elderly high on our priority list. Members of the IMS Board of Trustees and the IMS Committee on Aging and Chronic Illness have met with individuals from several organizations representing elderly Iowans to discuss health care access and cost problems brought about by changes in Medicare.

"Our major effort this year was an attempt to reform the tort system and abate the medical liability crisis. Some of our goals were attained, some were not. . . . I think once you learn the workings of the legislature, you will find in the art of compromise arena, we did quite well."

A recent issue of *The Internist* magazine discussed a survey on the Medicare prospective payment system. The survey was conducted by the House of Representatives select Committee on Aging and its Task Force on Rural Elderly. An overwhelming number of respondents said many patients are discharged from the hospital in worse condition than before PPS was established. Respondents also reported that the number of early discharges has led to a greater demand for after-hospital support systems. According to the survey, rural areas have more severe problems than urban areas. We must not have care containment in elderly programs. We must never abrogate our responsibility to the patient by putting cost considerations first.

Tomorrow marks the end of my term as president of the Iowa Medical Society. It has been a rewarding and productive year. It is an honor to serve as head of this outstanding organization and I thank you for the opportunity to do so.

Charlie Brown once told Lucy Van Pelt, "the teacher said I did real well today. She said I was the best pupil in her class." Lucy asks, "Well, does that make you happy, Charlie Brown?" Charlie responds, "Yes, it's always thrilling to be recognized in one's own lifetime."

I thank you for this recognition.

Communication — Watchword For 1986/87



L. DEAN CARAWAY, M.D.
Amana, Iowa

Speaking, writing, listening, reading — all elements in the communication process — are important to the Iowa medical practitioner. We need constantly to be honing our communications skills as we interact with various publics — our patients and their families, our professional colleagues, our elected lawmakers, etc. These thoughts were expressed by the new IMS president at his April 20 inaugural.

THANK YOU for electing me to be president of the Iowa Medical Society in 1986/87. I recognize the importance of this office, and I look forward to the challenge it represents. I congratulate my immediate predecessor, Emmett Mathiasen, on his successful term. Dr. Mathiasen has worked hard and achieved much. He has provided energetic leadership in our major tort reform program.

These remarks were presented by L. Dean Caraway, M.D., on April 20, 1986, following his installation as president of the Iowa Medical Society.

Various themes have been selected by previous IMS presidents. Mine will be simple and challenging — COMMUNICATION. Those of us who practice medicine must be vigilant in our efforts to foster clear, concise and accurate communication in every phase of our professional lives. We cannot perform effectively unless we make a total commitment to the transmission of information — both spoken and written.

I am anxious to stress three areas of communication this year. They are familiar to all of us, but we need to reemphasize them continuously.

Intraprofessional Communications

Number one, we have to communicate skillfully on the intraprofessional level. We must be absolutely conscientious in that communication which is associated with patient care.

Also, with communications between physicians, we need to provide opportunities for informational exchanges among the different medical and surgical specialties. The Iowa Medical Society has presented annual briefings for presidents and officers of state spe-

(Please turn to page 278)

Questions and Answers — An Interview With Clarence H. Denser, Jr., M.D.
Chairman, Legislative Committee
Iowa Medical Society

Progress Is Made In Iowa Liability Reform

On Tuesday, April 29, the 1986 Iowa General Assembly gave the nod to a tort reform bill which represents a meaningful beginning in addressing the complex medical liability crisis. Here, Clarence H. Denser, Jr., M.D., chairman of the Iowa Medical Society Legislative Committee, discusses components of the bill which are pertinent to physicians and outlines goals for the 1987 legislative session.

Please elaborate on provisions in the new liability legislation which are of particular interest to physicians.

Although Senate File 2265 does not include all of the provisions which the Iowa Medical Society believes are necessary to improve the liability climate, it is a significant beginning. Provisions of the bill which will affect Iowa physicians are:

- *Peer review records will be privileged,* not subject to any means of legal compulsion for release to persons other than an affected licensee or peer review committee. They will not be admissible in any legal proceeding other than one involving licensee discipline.
- *Full and confidential reports of final hospital actions* resulting in a limitation, suspension, revocation or voluntary surrender of a physician's practice privilege for reasons of professional competence must be made to the Board of Medical Examiners.
- *A plaintiff is required to certify to the court the names of experts,* their qualifications and the purpose for calling the expert within 180 days of the defendant's answer to a claim. The defendant must name experts within 90 days of the plaintiff's certification.
- *Expert witnesses testifying in physician and dental malpractice cases* are required to have qualifications directly related to the problem and treatment at issue.
- *The signature of the plaintiff or the plaintiff's legal counsel is required on all motions, pleadings or other papers.* The signature will certify that the person has read the document; that, to the best of the person's knowledge, the information is correct; and that it is not submitted to harass, cause unnecessary delay or needlessly increase the cost of litigation.
- *If, in the preceding 5-year period, a party has unsuccessfully prosecuted 3 or more actions* deemed frivolous by the court, the court will have authority to stay the proceedings until the party furnishes sureties to pay all costs incurred by the defendant. The sureties will include a reasonable attorney fee.
- *Any party will be able to petition the court for a determination of the appropriate payment method of a judgment.* The court may then order structuring of the payment method for all or part of a judgment, unless the court finds the payment method would be inequitable, provide insufficient guarantees of future collectability or could be subject to other claims against the defendant.
- *Punitive damages will not be permitted* unless the defendant's actions constitute willful and wanton disregard for the rights and safety of another. The mere allegation of a claim for punitive damages will not form the basis for discovery of wealth or ability to respond to a

claim for damages until the claimant has established that sufficient admissible evidence exists to support a *prima facie* case establishing the defendant acted with willful and wanton disregard.

- *The Board of Medical Examiners will be permitted to revoke, suspend or restrict* a licensee's practice if that licensee's practice was voluntarily restricted in another state, district, territory or county.
- *The Supreme Court will be permitted to issue rules mandating arbitration* of actions where a claim does not exceed $15,000. The arbitration would not preclude a trial if either party rejects the arbitration decision.
- *A commission will be established to study liability issues* and liability insurance concerns. The commission will include 8 legislators; 4 representatives of the private sector or industries, professions or other affected groups; and the Attorney General and Commissioner of Insurance or their designees as ex-officio members. The commission will study issues including implementation of caps on liability payments. The commission's report will be due December 15, 1986.

What are the IMS goals for the 1987 General Assembly?

In the coming months, the original recommendations of the Task Force on Medical Liability will be reevaluated from the perspective of Senate File 2265. Through this process, we will determine what proposals should be presented to the 1987 General Assembly. We will be closely analyzing significant tort reform measures not enacted this year. These include caps on non-economic damages, limits on attorney contingency fees and shortening of the statute of limitations on liability actions.

Are there indications that tort reform may be a major issue in next year's legislative session?

Yes. The liability study commission mandated by Senate File 2265 will draw attention to the issue in the coming months. Liability will also be a key campaign issue in this fall's elections and that momentum will carry over into the 1987 legislative session.

The broad-based liability coalition spearheaded by the Iowa Association of Business and Industry and the Iowa Medical Society will be working to ensure that the liability crisis stays in the spotlight. In preparation, the IMS is formulating plans to reanalyze public attitudes and awareness of the issue.



Clarence H. Denser, Jr., M.D.

What barriers lie ahead in 1987 and what will the IMS be doing to overcome them?

A major barrier is opposition to meaningful tort reform by some members of the Iowa General Assembly. In the 1986 elections, the Iowa Medical Political Action Committee (IMPAC) will be supporting those candidates who understand the issue of liability and its effect on the medical community.

Another major barrier is the misinformation or lack of information being provided to the public. The continued involvement of physicians and Auxiliary members in getting good information to the citizens of Iowa is essential.

What can IMS members do to assist in the second phase of the liability reform campaign?

The time to start laying groundwork for next year's legislative session is now. Physicians and Auxiliary members are urged to become involved in the November elections and work actively in campaigns for good legislative candidates. In addition, we must continue to inform the public of the breadth and depth of the crisis situation.

A Point of View —

On Organ Transplantation — Its Future in Iowa

ROBERT J. CORRY, M.D.
Iowa City, Iowa

IOWA MEDICINE's *Point of View series this month presents a perspective on organ transplantation. The director of the University of Iowa Transplantation Service offers his views on how this state should proceed in this highly visible field. He questions the "pluralistic" approach.*

IN SOME SECTORS of the country, including the State of Iowa, society is conducting an experiment to decide if the principles of marketplace economics can be applied effectively to the financing of medical care, while sustaining a rational distribution of these services. The outcome of this experiment is still forthcoming. National authorities recognize that experimentation with the competitive model of medicine must be complemented by moderate regulation to sustain rational distribution of those new, expensive and complex services which are arising from the explosion in medical research.

In health care, there has been established a practice of regionalizing these costly new clinical services in comprehensive academic medical centers where research fuels their development and refinement. This continues to be sound public policy because it assures that high cost, duplicative programs are avoided. Through centralization, patient numbers are adequate to achieve economies of scale and clinical proficiency for the public good.

Transplantation of human organs is a case in point. Centralization now exists for the ultimate benefit of patients being served, as well as society as a whole. Low volume clinical programs have fewer patients across which costs can be spread and, more importantly, less clinical focus and experience to help assure optimal patient outcomes. A transplant program's proficiency and cost effectiveness are reflected in the center's success rate.

In considering the future of organ transplant services in our state, Iowans should consider what has been learned through their long-standing organ transplant program at the University of Iowa hospitals. Some of the significant features of this experience, and associated conclusions drawn by the health professionals who have been instrumental in developing these programs, are set forth here to help us all understand the implications of alternative courses of action.

The Costs of Transplantation

A successful transplant center requires a huge investment. At University Hospitals, where more than 100 organ transplants and approximately 300 tissue transplants will be performed this year, the annual operating cost for these programs exceeds several million dollars. Physicians from 37 medical specialties and subspecialties are involved in the transplant programs at University Hospitals, reflecting the

Dr. Corry is professor and head of the Department of Surgery and director, Transplantation Service, University of Iowa Hospitals and Clinics.

need for 24-hour availability of a multidisciplinary team. In the aggregate, more than 100 physicians and other health professionals are devoted to the care of transplant patients.

For over 16 years University Hospitals have operated a statewide organ recovery and retrieval network in cooperation with national organizations to assure that all available organs are made available to critically ill patients in Iowa and throughout the nation. This support service alone has an annual operating cost of more than a million dollars.

Because of the centralized nature of Iowa's longstanding transplant program, these services at University Hospitals are now provided at a cost of approximately 16-30% below the national average, depending on the particular transplant involved.

Quality of Patient Care

The comprehensive tertiary care structure of University Hospitals and the scope and breadth of its resident physician training programs assures transplant patients around-the-clock access to experts in all medical and surgical subspecialties. Organ transplantation is clearly a team effort; its success depends on how long and how well this "team" has been established, how dedicated its members are, and how well they function together. Experience plays a major role in determining patient outcome. University Hospitals' 16-year experience in organ transplantation provides assurance that an experienced multi-disciplinary team is available. This is reflected best in the present patient survival and transplant success rates which are among the best of centers worldwide.

Additionally, the transplant clinicians and their basic science colleagues are involved in ongoing related medical research activities supported by the National Institutes of Health and other extra-mural funding sources to advance the future quality and success of organ transplantation. Members of the University of Iowa transplant team have contributed several hundred articles to the body of knowledge in transplant research.

Reducing the number of patients at the University of Iowa by encouraging the development of additional in-state transplant programs has the potential of eroding the overall quality of care available to Iowans; of escalating aggregate costs to Iowans for these services; and, because of the splintering effect, delaying the introduction of clinical advances in the transplantation of human organs. Such splintering could result also in no Iowa program having an adequate number of transplant patients to qualify as an approved transplant center for payment, thus forcing Iowans to leave the state to receive these lifesaving services.



Robert J. Corry, M.D.

Who Decides Where Transplants May Be Performed?

Responsibility for approving transplant centers for specific procedures and reimbursement rests with several national and state agencies. These agencies focus on criteria that acknowledge the benefits of a "center effect," flowing from the presence of a program that involves multiple transplant services. The standards are designed to focus transplantation in a few centers to assure quality patient care, cost effectiveness, optimal use of donor organs, and advances in organ transplantation through related clinical research.

The standards for recognition as a transplant center include numbers of procedures performed; the presence of graduate medical education (University Hospitals has a total of 602 resident and fellow physicians engaged in graduate medical education activities); staff experience with clinical management of highly

complex immunosuppressive pharmaceutical agents; presence of a transplant surgeon certified with at least one year of training and experience in transplant surgery beyond basic surgical board certification; and availability of support services, such as immediate access to sophisticated pathology and radiology services, and the crucial tissue typing laboratory. The Tissue Typing Laboratory at the University of Iowa transplant program is operated by 8 full-time staff with an annual operating cost of approximately $725,000. In accord with national standards, the laboratory is located in immediate proximity to the transplant center to perform critical cross-matching and tissue typing required for transplant success.

Legislative Considerations

The Iowa State Department of Health has sponsored legislation to require a Certificate of Need review by the Department and its Citizens Council for all new organ transplant programs. It would not ban new services, but would merely subject them to review before they are initiated. The Iowa Hospital Association, the State Department of Health, and Blue Cross and Blue Shield of Iowa support this legislation because of a need to avoid costly duplication and to assure adequate patient volumes to sustain high-quality transplant services for Iowa.

Progress in clinical organ transplantation in the last decade has been extremely encouraging. Several major developments have led to improved success rates for kidney, liver, pancreas, and heart transplants. They include improved immunosuppressive regimens with utilization of the new drug, cyclosporine; a more sophisticated understanding of tissue matching provided at the University of Iowa; and progress in the storage and long-range shipping of organs by use of commercial and small jet aircraft.

The Future of Organ Transplants

With appropriate timing of the donor and recipient operations, organs can be removed almost anywhere in the country and transplanted in any location within a few hours. The improving success rates in nonrenal organs have been primarily related to the development of increasing competence of multidisciplinary medical and surgical teams, particularly in well-established transplant centers. It has become apparent that the best transplant centers are those having the capacity to transplant all organs. These same teams are also able to remove from cadaver donors all viable organs, which include kidneys, liver, pancreas, heart, skin, eyes for corneas and, in some cases, long bones.

Our success in Iowa transplant activity will require sagacious restraint to avoid the temptation of seeking a short-term illusion of success by undertaking broadside surgical transplantation procedures. Evolving national standards will support centers that have the continued presence of the very best clinical experts in several medical disciplines and other essential resources to deal with the numerous complications that arise before and after transplantation. This concentration of effort and resources will assure the continued pursuit of

IMS House of Delegates Sets Transplant Policy

At the April session of the Iowa Medical Society IMS House of Delegates session, a resolution was presented asking the society to support the "single comprehensive organ transplant services as now constituted at the University of Iowa." This resolution was introduced by the Scott County Medical Society.

Following discussion of the petition in an open reference committee hearing, the 1986 House of Delegates approved these alternate resolutions:

***Resolved,* That the Iowa Medical Society, in organ transplantation as with any area of medical care, support the concept of pluralistic care delivery so long as quality is the fundamental objective.**

***Resolved,* That the Iowa Medical Society encourage and foster the elements of coordination and cooperation in the field of organ transplantation to the fullest extent possible and request that this be pursued by the Committee on Organ Transplantation.**

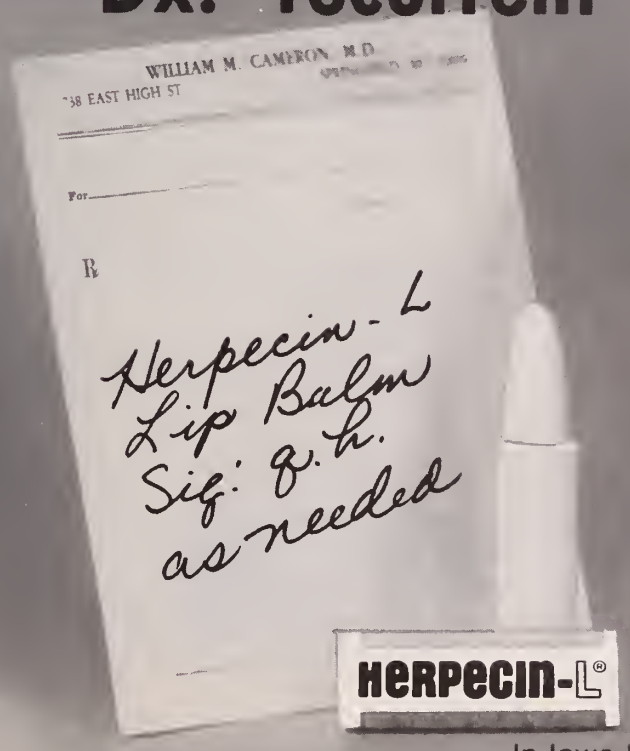
clinical and fundamental research that will allow us to treat the complications of transplantation and hopefully even prevent them by "fine tuning" the process by which our bodies fight the foreign organ and foreign microorganisms that cause fatal infections. Fragmentation of transplantation procedures will potentially reduce the number of patients below the level that will allow such research to proceed on an effective basis. Transplantation procedures are *not* fully perfected, and there is a pressing need for continued research in centers of academic excellence to refine the use of these procedures.

The issue in Iowa is whether to maintain one organ transplant program carefully developed over 16 years with substantial investments in human and capital resources, and which has achieved national and international recognition for its quality, or to risk having 2 or more mediocre programs or none at all. Based on standards now in place, small states like Iowa cannot clinically or economically justify more than one program if high quality is to be maintained.

Each new individual organ transplant service proposal should be subjected to intense public scrutiny and accountability. Use of the Certificate of Need Law for this purpose will provide Iowa with a responsible decision-making process to assure the public welfare takes precedence over the parochial interests of a single institution.

The decision of the 1986 IMS House of Delegates to apply the concept of pluralistic care delivery to such a complex field as organ transplantation is open to question, particularly in a state where resources, patients and donor organs are limited. Success rates of small single organ transplant programs will be considerably less than in major centers of excellence. The patient will be the loser.

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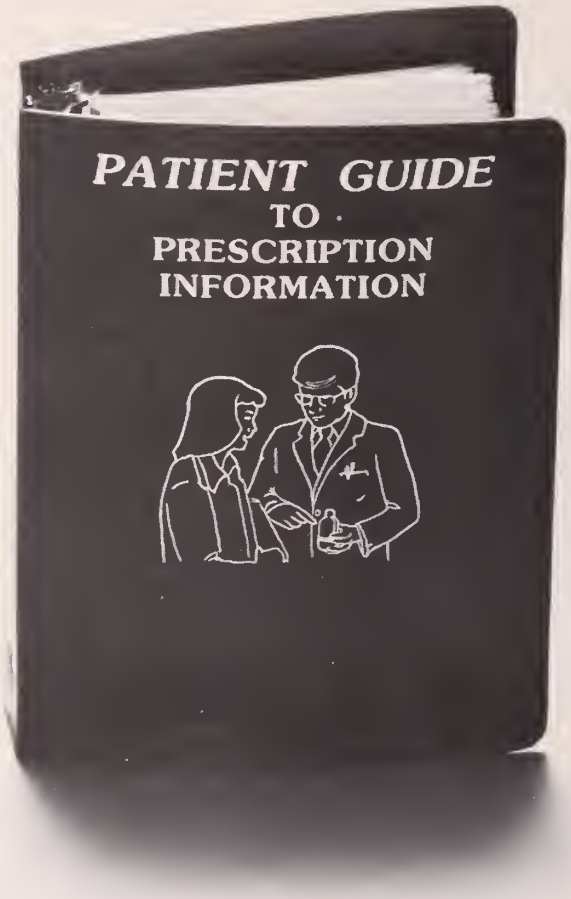
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Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

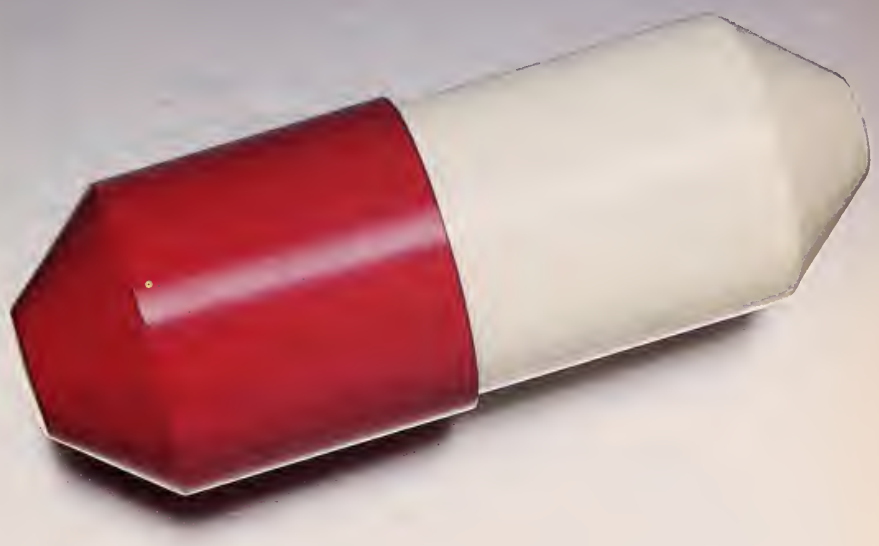
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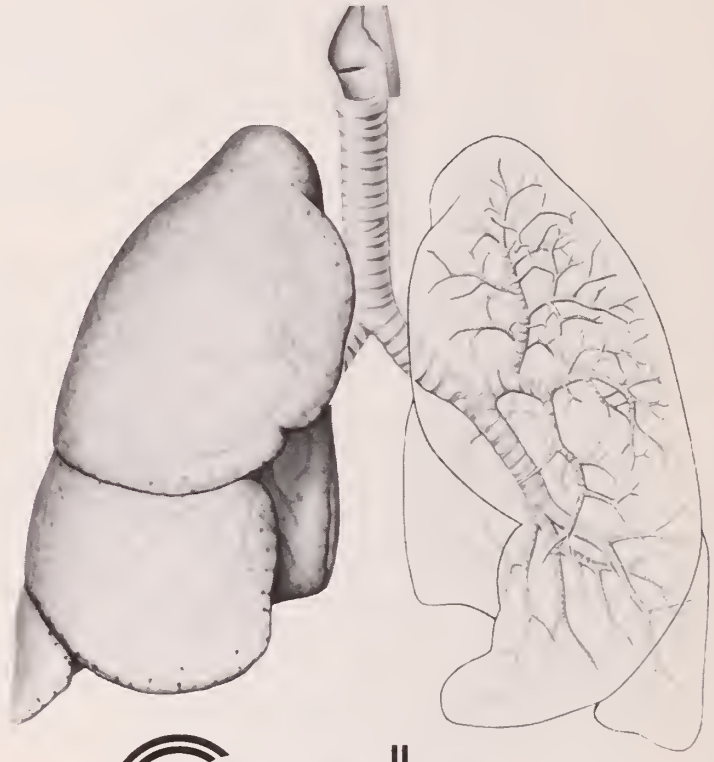
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Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- In renal impairment, safe dosage of Ceclor may be lower than that usually recommended. Ceclor should be administered with caution in such patients.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

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- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, erythema multiforme, serum-sickness-like reactions): 1.5%; usually subside within a few days after cessation of therapy. These reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%.

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Percutaneous Transluminal Coronary Angioplasty: Evolution and Changing Concepts

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JAMES SKINNER, M.D.
Des Moines, Iowa

Percutaneous transluminal coronary angioplasty (PTCA) can be performed with a risk/benefit ratio at least equal to that of open heart surgery. This is the conclusion drawn by physicians at Mercy Hospital Medical Center in Des Moines who have performed the procedure on 1000 patients since 1980. This article describes methods, results and complications involved in PTCA.

In 1964, Dotter and Judkins introduced the technique of transluminal angioplasty for the treatment of atherosclerotic lesions of the femoral artery.[1] The technique met with enthusiasm in Europe but was virtually ignored in the United States. In 1977, Andreas Gruentzig in Zurich, Switzerland reported on development of a smaller version of the dilatation catheter for use in the coronary arterial tree and its successful application in dilatation of atherosclerotic coronary arteries.[2, 3] Shortly thereafter, the technique was introduced in Germany by Kaltenbach and Kober and in the United States by Myler and Stertzer.[4]

Drs. Iannone, Brown, Wickemeyer, Wheeler, Gordon and Rough are associated with Cardiology Associates in Des Moines. Drs. Phillips, Zeff, Kongtahworn and Skinner are affiliated with Cardiac Surgery Associates in Des Moines.

Methods

In our laboratory the PTCA procedure involves the percutaneous femoral technique in the vast majority of cases. (The brachial approach has been used in approximately 1% of our patients. This approach has been discussed in other articles.)[5] Using local anesthesia, coronary angiography is carried out using the Judkins technique. In our early experience, a pacemaker catheter was inserted into the right ventricle and a Swan-Ganz or pulmonary artery catheter was inserted into the pulmonary artery marking the site of cor-

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TABLE 1

INCIDENCE OF PTCA BY YEAR

Year	CA*	#PTCA	% of CA having PTCA
1980	618	13	2.0
1981	815	87	10.6
1982	970	152	15.6
1983	999	248	24.8
1984	993	374	37.6
1985 (thraugh April)	274	126	45.9

*CA = coranary angiography

onary artery stenosis and for hemodynamic monitoring. This was discontinued after the first 30 cases.

Premedications consist of Dipyridamole® 75 mg t.i.d. and nifedipine 10 (or diltiazem 60) mg t.i.d. 24 hours prior to the procedure. These drugs are continued for 6 months. Aspirin 5 grains daily is started after the procedure and continued indefinitely. Intravenous heparin 10,000 units is given at the onset of the PTCA along with nitroglycerin sublingual 1/150 and verapamil 5 mg I.V.

An 8 or 9 French US Catheter and Instrument Company or Cordis introducer is advanced into the femoral artery. An appropriate right or left femoral guiding catheter is then passed into the abdominal aorta. A 0.38 cm guidewire is inserted into the guiding catheter. After the guiding catheter and spring guidewire are advanced around the aortic arch to the ascending aorta, the guidewire is removed. The guiding catheter is then placed in the coronary ostium and the appropriate dilatation catheter is advanced through the guiding catheter into the coronary artery.

Dilatation catheters with balloon lengths of 2 mm and more recently 2.5 mm have been utilized. Balloon diameters used are from 2.0 to 4.0 mm. As the dilatation catheter is passed into the coronary artery, contrast material is injected to define the anatomy of the occluded vessel and to aid in positioning the balloon at the stenotic segment. Both proximal and distal pressures are continuously monitored throughout the procedure. Inflation pressures vary from 6 to 12+ atmospheres using the Dorros-Spring pressurizer (Milwaukee, Wisconsin) with a minimum of 3 dilatations for each lesion. Continued dilatations are done until no further indentation of the balloon by the lesion is noted.

Generally, the balloon is inflated from 20 to 120 seconds or until ST segment abnormalities occur and/or the patient develops chest pain. At the end of the procedure, a pull-back pressure is recorded and coronary angiography is repeated in multiple projections. The patient is usually monitored in the coronary care unit overnight with the femoral arterial lines left in place for 4 hours. Increased activity is encouraged the following day. On the second day following the angioplasty a 70% Bruce protocol treadmill is performed.

TABLE 2

RESULTS OF PTCA BY YEAR

Year	# Patients with PTCA	# Successful	% Successful	# To Surgery	% To Surgery
1980	13	6	46.2	4	30.7
1981	87	71	81.6	8	9.1
1982	152	121	79.6	15	9.8
1983	248	221	89.1	13	5.2
1984	374	322	86.0	11	2.9
1985	126	111	88	5	3.9
YTD	1000	852	85.2	56	5.6

Results

From 1980 through April, 1985, 1000 patients underwent elective angioplasty (Table 1). 1107 vessels with 1385 lesions were attempted in 726 males and 274 females. The mean age was 57 and age range was 30 to 84. There were 850 patients with a single vessel PTCA, 138 with a double vessel PTCA, and 12 patients with whom 3 vessels were attempted. Table 2 shows the breakdown of patients by year. Table 3 shows the breakdown by specific vessels.

As experience and expertise have increased, the success rate has improved to the 88% range. As skill is gained, attempts are made at more complicated stenoses and more combinations of stenoses. Patients in a more compromised cardiac state are also undergoing the procedure.

The average initial stenosis was 84% with a final stenosis of 25% and an average change of 58%. The average initial crossing gradient was 46 mm Hg, reducing to 10 mm Hg with an average reduction of 35 mm Hg or 78%.

TABLE 3

RESULTS OF PTCA BY SPECIFIC VESSELS

Vessel	#	# Lesians	# Successful	% Successful
LAD	559	684	491	87.8
RCA	338	403	273	80.7
CFX	116	168	97	83.6
SVG	36	52	30	83.3
Other	58	78	54	93.1
	1107	1385	947	85.5

Our success rate did not vary significantly from vessel to vessel. The left anterior descending coronary artery was dilated with an 87.8% success rate for 684 lesions in 559 vessels. An 80.7% success rate for the right coronary artery was achieved with 403 lesions in 338 vessels; there were 65 failures. There were 168 stenoses in 116 circumflex coronary arteries with 52 failures for an 83.6% success rate. 36 vein grafts were attempted with 52 lesions (with 16 failures) for an 83.3% success rate. 78 lesions in 58 other vessels were attempted with a 93.0% success rate. Of these 58 other vessels noted in Table 3, there were 3 septals, 26 diagonals, 5 left mains and 24 obtuse marginals. Also included in this series were 56 totally occluded vessels, 30 of which were recanalized, with a success rate of 53.5%.

Most patients in which the procedure was successful had improvement in the treadmill test or in Thallium treadmill testing. Approximately half of those patients who had unsuccessful PTCAs necessitated coronary artery bypass surgery. Emergency surgery was performed on 56 of the patients undergoing angioplasty (5.6% of the total number). 12 of the 56 had subendocardial infarctions and 12 had transmural MIs (21%). 68 of 92 remaining failures subsequently had cardiac surgery because of continued angina refractory to medical therapy. Nine of these had subsequent subendocardial MIs. Of the remaining group of 24 who were treated medically, 8 had subendocardial MIs. Twelve patients with 18 successful dilatations later went to surgery for progressive disease in other vessels.

It is our current policy not to restudy patients routinely. However, they are restudied if they have had recurrence of angina and/or the development of a positive treadmill test. Followup includes 104 restenoses or 10.4% of the total. These include 84 patients who had a second angioplasty, 16 who had a third and 4 who had a fourth angioplasty. Thus, 64 of the 104 restenosed vessels were in 16 patients.

Complications

Ventricular fibrillation occurred in 14 patients, or 1.4% of the total. Transmural myocardial infarction occurred in 37 (3.7%) of the patients who had successful angioplasty. There were 7 acute deaths (0.7% mortality), 4 of which

TABLE 4

MAJOR COMPLICATIONS

Complicatian	# af Patients	% af Patients
Ventriculor fibrillation	14	1.4
Tronsmurol myocordial inforction	37	3.7
Deoths		
Loborotory or following emergency surgery	7	.7
Urgent byposs surgery required for acute occlusion of coronory ortery	56	5.6

followed acute vs. emergency bypass surgery after PTCA. Three of these occurred in the first 150 patients, 2 in the next 350 patients and 2 in the final 500 patients of the study. There have been 6 additional long term deaths following PTCA (0.6%), for an overall death rate of 1.3% since the initiation of the procedure in 1980 (Tables 4, 5). The hospital course of those that expired is described below.

Description of the Patients With Post PTCA Mortality

The first of these patients had a successful dilatation of the left anterior descending, but a circumflex lesion could not be dilated. The patient developed chest pain. An intra-aortic balloon pump was inserted with dissection of the aorta and subsequent rupture, shock and death.

The second patient was undergoing dilatation of a circumflex lesion when the catheter, with the balloon deflated, inadvertently entered the left anterior descending coronary artery, causing a dissection of that vessel. The patient then underwent successful bypass surgery but died 24 hours later in the recovery

(Please turn to page 274)

TABLE 5

COMPLICATIONS OF PTCA

Age	Sex	CAD	Site of PTCA	Complicotions	Surgery after PTCA	Cause af death
In Hospitol Deoths						
52	M	MVD	LAD/LCx	Dissectian	Emergency	Dissectian af aarta due ta intra-aartic ballaan pump
64	M	MVD	LCx	Dissectian	Emergency	Died 24 haurs P.O. unable ta successfully defibrillate
49	M	MVD	LCx	Nane	Elective (24 haurs)	Recurrent VF
47	M	MVD	RCA/LAD	Dissectian	Emergency	Died in surgery
Loborotory Deoths						
61	F	MVD	LAD	Reclasure of LAD	Na	Prabable obrupt reclosure af LAD
69	M	MVD	RCA/LAD	Tatal occlusion of LAD		Asystale
Non Surgicol Deoths						
69	M	MVD	LAD/LCx	LCx clased	Na	Acute anterior wall MI and 2° renal failure

Abbreviatians: MVD = Multivessel diseose; LAD = Left anteriar descending ortery; LCx = Left circumflex artery; MI = Myocordiol infarctian; P.O. = Pastaperative; VF = ventricular fibrillation

area after having a sudden episode of ventricular fibrillation.

The third patient had an uneventful dilatation of the circumflex coronary artery. He developed chest pain 2 days post PTCA and underwent bypass surgery but died post operatively with recurrent ventricular fibrillation.

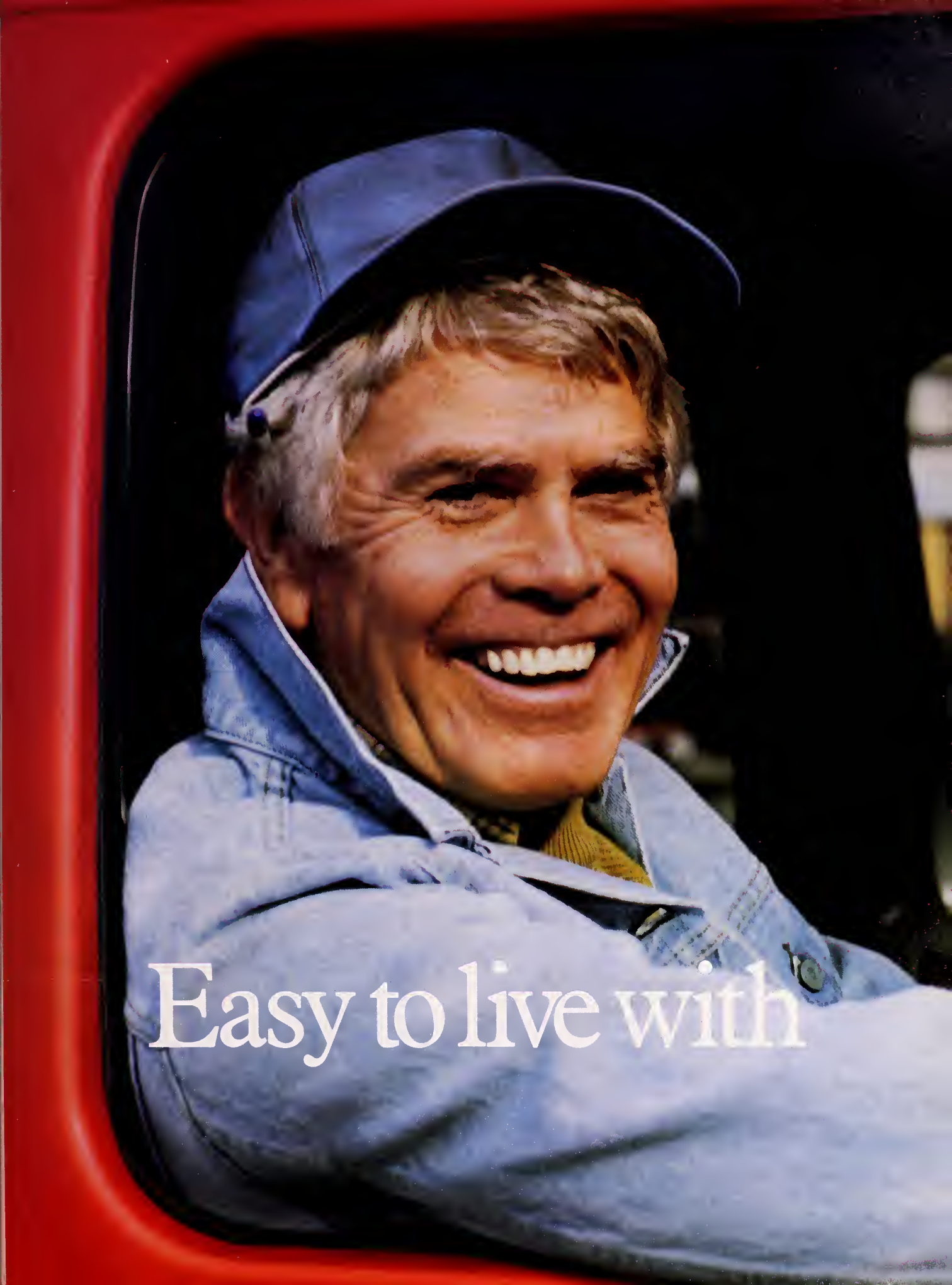
The fourth patient had a dissection of his coronary artery and died in emergency surgery. A fifth patient was an obese diabetic female with a previous large inferior wall infarction and pre-infarction angina. She had experienced a small cerebrovascular accident. Although she refused bypass surgery, she agreed to undergo PTCA. The left anterior descending coronary artery was successfully dilated but, as she was being moved from the catheterization lab, she arrested and could not be resuscitated. The sixth death occurred when the patient developed asystole secondary to a totally occluded anterior descending coronary vessel.

The final patient developed chest pain of the circumflex and left anterior descending vessels post PTCA with a CPK elevation but no elevation of the MB fraction. There were no EKG changes. One week later the patient redeveloped chest pain and upon restudy was found to have closure of the circumflex vessel. Because of a history of abdominal aortic aneurysm, intermittent claudication, carotid bruits and previous carotid surgery, the patient was treated medically. He continued to have chest pain and then developed an acute anterior wall myocardial infarction. He deteriorated, developed renal failure and congestive heart failure, and died.

Discussion

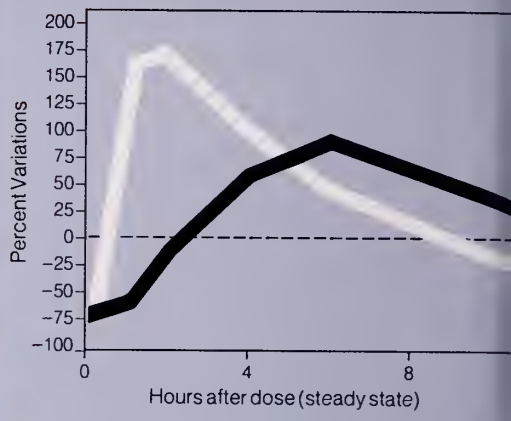
The stated elective mortality rate at the Cleveland Clinic from coronary bypass surgery is 2.9% for women and 1.3% for men.[6] In the coronary artery surgery study (CASS), patients 65 years or over have undergone coronary bypass surgery with a peri-operative mortality of 5.2%.[7] In the patients under 65, the mortality rate was 1.9%. There was a statistically nonsignificant trend of increasing mortality with advancing age: 4.6% in patients 65-69 years of age, 6.6% in patients 70-74 years of age, and 9.5% in patients 75 years and older. Measured in terms of hospital stay, morbidity was also greater in the over 65 age group than in the under 65 age patients. In the group of patients reported here, 90 patients or 18% were 70 years of age or older, with the oldest being 84. None of these patients died, and the complication rate was no different than the total group. The 7 acute deaths were in patients less than 70 years of age who had multivessel disease, supporting the theory that multivessel

(Please turn to page 275)


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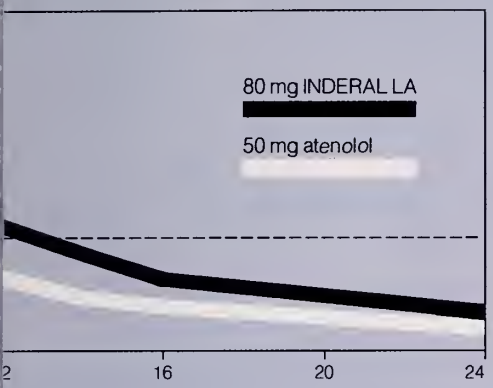
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CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a fachyarrhythmia treatable with propranolol.

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of sympfoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18 month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, fachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In acfual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS: Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY: Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular. Bradycardia, congestive heart failure, intensification of AV block, hypotension; paresthesia of hands; thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System. Lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to catatonia, visual disturbances; hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss; emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal. Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation; mesenteric arterial thrombosis, ischemic colitis.

Allergic. Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory. Bronchospasm.

Hematologic. Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune. In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous. Alopecia; LE-like reactions, psoriasiform rashes; dry eyes; male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal. Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation; jaundice (intrahepatic cholestatic jaundice); pancreatitis; sialadenitis.

Central Nervous System. Dizziness, vertigo; paresthesias, headache, xanthopsia.

Hematologic. Leukopenia, agranulocytosis; thrombocytopenia; aplastic anemia.

Cardiovascular. Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity. Purpura; photosensitivity, rash; urticaria; necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis; anaphylactic reactions.

Other. Hyperglycemia, glycosuria, hyperuricemia, muscle spasm; weakness; restlessness; transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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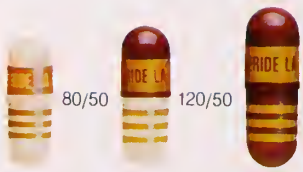
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PTCA has a risk of 2-3 times that of single vessel disease.

Approximately 12% of the patients had multivessel disease. Only the worst vessel or the vessel which was targeted as the cause of angina was dilated. This group has done well with basic relief from angina. During a 3-6 month follow-up, they have not required bypass surgery or dilatation of other stenotic vessels.

Conclusions

Table 2 represents a typical example of the learning curve experienced in most large centers performing PTCA. Percutaneous transluminal coronary angioplasty can be performed in a community based hospital with a risk/benefit ratio that is equal to or better than that of coronary bypass surgery. As is shown in this article, the procedure can be offered to elderly patients and patients with multivessel disease. As experience is gained, the success rate is enhanced.

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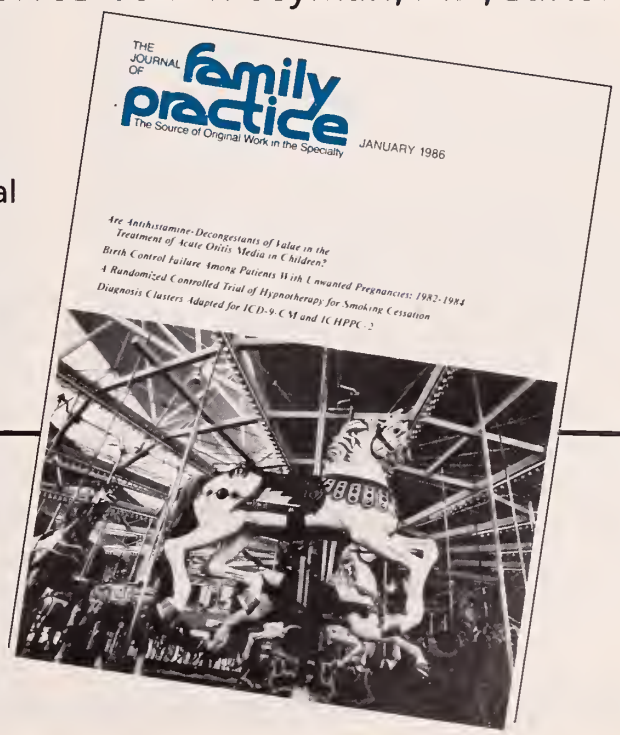
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Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



ENTER OUR PROFESSION WITH PRIDE

The practice of medicine is an art, not a trade; a calling, not a business; a calling in which your heart will be exercised equally with your head. Often the best part of your work will have nothing to do with potions and powders, but with the exercise of an influence of the strong upon the weak, of the righteous upon the wicked, of the wise upon the foolish. — Sir William Osler (1849-1919) — *The Master Word in Medicine*

THE BEAUTY of Spring is upon us. New growth is all around. We spend long, dreary hours each winter looking ahead to the wonders of a new growth season. So it is with life; each new season of our professional careers heralds the emergence of the new practitioners of medicine. And, we welcome them.

Some of these new physicians may regard themselves as entering the business of medicine; that may be true, but the practice of medicine still remains a calling. It can be a very satisfying calling. Our gratification comes from the fact that we do well for ourselves by doing well for others. Oliver Wendell Holmes in his *Scholastic and Bedside Teaching* said, "The best a physician can give is never too good for the patient."

The practice of medicine is filled with emotion. Those entering the active practice of health care will soon have this fact become evident. The one-to-one relationship — *the doctor-patient relationship* — will become real, and will grow in intensity with experience. The tedium of medical school with the subsequent embellishment of formal residency training prepares the new physician; then it's time to perfect and apply all that supervised learning.

Osler also wrote "Medicine is a most difficult art to acquire. All the college can do is to teach the student principles, based on facts in science, and give him good methods of work. These simply start him in the right direction; they do not make him a good practitioner — that is his own affair."

Sir William Osler was a physician, scholar, philosopher and family man. He is the complete professional role model for any physician who truly has had the call to practice medicine. Any new medical graduates would do well to read his writings. For many years medical college graduates received a copy of Osler's "Aequanimitas" from a major pharmaceutical firm. This Roman watchword is appropriate today for equanimity as an element of our noble profession. The writings of Osler remain excellent reading material for the physician young and old.

We hear so much of third party interference, governmental regulations, various programs of prepaid health care, as well as the litigious climate of our entire social order. This has to concern those entering medical practice. It may frighten some. Do the liabilities of our profession outweigh the assets?

A provocative essay appears in the April 24, 1986, issue of the *New England Journal of Medicine* in this vein. Dr. Carola Eisenberg, dean of student affairs, Harvard Medical School, insists, "It is still a privilege to be a doctor." The thesis is that we need to mobilize our natural allies (our patients and the public at large) to help resist those who deprecate medical services. We must complain less of self-serving

interests (income and freedoms of practice) and emphasize what we can do to provide good health care for our patients. As long as we concern ourselves openly about our self-serving concerns, "we will remain isolated and impotent."

To the newly graduated and those completing residency training we congratulate you on entering a time-honored profession. You have been trained well, but your education is far from complete. To be a good practitioner is your affair. It is your responsibility and your privilege to serve your patients. You will continue to learn as you go out among your fellow physicians. Do not be dismayed by carping and gloom-mongering by some. Medicine can be an enjoyable and satisfying profession. The prospects are far from bleak and your greatest rewards will certainly be other than monetary. — M.E.A.

Letter to the Editor

ON CHEMICAL DEPENDENCY

Dear Editor:

I was pleased to see the focus of the March "Iowa Medicine" issue was that of chemical and substance abuse. As the new medical director at the University of Iowa Chemical Dependency Center at Oakdale, I was pleased to see an effort taken by the Iowa Medical Society to further coordinate and improve the care of chemically abusing patients in Iowa by producing a publication relevant to our state. I would like to offer my services for any further publications you may be planning regarding substance abuse and alcoholism. Although I am relatively new to the field, my position at Oakdale, which is Iowa's only state-funded chemical dependency treatment center available to the entire state, has provided me with a somewhat unique perspective on one aspect of substance abuse in Iowa. — RALPH KNUDSON, M.D., *Assistant Professor, Medical Coordinator, Chemical Dependency Center, University of Iowa*

A. J. HAVLIK, M.D. 1910-1986

ALOYSIUS J. HAVLIK, M.D., was born in 1910, graduated from Loyola Medical School in 1933 and was in active family practice in Tama, Iowa from 1934 until his death in March of 1986. During World War II he served as a medical officer aboard a destroyer in the Pacific. He continued in the Naval Reserve and retired as a captain.

Dr. Havlik was highly respected and beloved by the Tama community in which he practiced and was held in high regard by his peers in the medical profession in Marshalltown where he cared for his hospital patients. He had a keen intellect and was ever the student, keeping abreast of current advances in medicine. He had a deep interest and appreciation of music and spent one summer in Europe studying music.

He was very active in the Iowa Medical Society, being the secretary of the Tama County Medical Society for about 35 years, a delegate to the IMS for Tama County for 30 years, vice-president of the IMS from 1969-1970, member of the IMS Board of Trustees for 6 years; and chairman of the IMS Board of Trustees from 1976-1977. In 1984 he was honored by the IMS with the Merit award for outstanding achievement.

Dr. Havlik was admired for his integrity, his devotion to medicine, and particularly for his positive attitude and enthusiasm in all his endeavors and assigned tasks. Dr. Havlik is survived by his wife Genevieve and five children.

Al's constructive contributions were many. HE WILL BE MISSED. — LAWRENCE O. GOODMAN, M.D., *Marshalltown*

COMMUNICATION — WATCHWORDS FOR 1986/87

(Continued from page 263)

cialty organizations. We need to expand on this and give it greater emphasis.

Communicate with Patients

Secondly, and most importantly, we must continually stress good communications with our patients and their families. Take that extra minute to say, "What's new?" "How's fishing?" Efforts to establish good rapport will enhance the well-being of the patient and recapture the bond of trust between you and your patients. Further, such practice will alleviate significantly the chances of any liability action.

Thirdly, we need to communicate openly and convincingly with our state policymakers. Those elected officials who serve in the Iowa General Assembly need to know of our intense interest in their actions. We are their constituents and we must be responsive verbally and financially.

Now is the time either to start or to step up your personal communications with your legislators. We have had excellent and valuable support in this area from our spouses. Our Auxiliary has done a wonderful job this year on the legislative front; we can use even more of this help.

We will need to pursue further our objective of tort liability reform. Then we can get on to other issues of vital concern to physicians and patients. We need to be fair and objective — and we need to be assertive as well.

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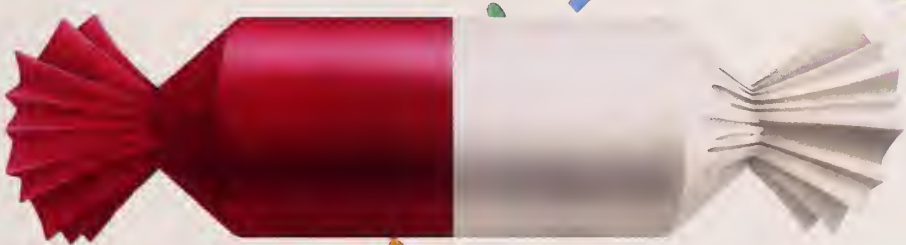
RECENT BOOKS

Giscard d'Estaing, Valérie-Anne, 1985, *The World Almanac Book of Inventions*, World Almanac Publications, New York, N.Y. $10.95. This almanac describes more than 2,000 inventions that have changed our lives. These brief descriptions are divided in a number of broad categories such as transportation, arts, agriculture, industry and medicine among others. Besides being informative, this is a "fun" book. It describes many bizarre inventions in addition to those which have molded the progress of society.

Bettelheim, Bruno, 1985, *A Home for the Heart*, University of Chicago Press, Chicago, Illinois, paper, $14.95. The author was the director of the Orthogenic School at the University of Chicago — a home for emotionally disturbed children — from 1944 until 1973. This book illuminates the physical, social and emotional aspects of such an institution.

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Contraindications: Severe left ventricular dysfunction (see *Warnings),* hypotension (systolic pressure < 90 mm Hg) or cardiogenic shock, sick sinus syndrome (except in patients with a functioning artificial ventricular pacemaker), 2nd- or 3rd-degree AV block. **Warnings:** ISOPTIN should be avoided in patients with severe left ventricular dysfunction (e.g., ejection fraction < 30% or moderate to severe symptoms of cardiac failure) and in patients with any degree of ventricular dysfunction if they are receiving a beta blocker. (See *Precautions.)* Patients with milder ventricular dysfunction should, if possible, be controlled with optimum doses of digitalis and/or diuretics before ISOPTIN is used. (Note interactions with digoxin under *Precautions.*) ISOPTIN may occasionally produce hypotension (usually asymptomatic, orthostatic, mild and controlled by decrease in ISOPTIN dose). Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C.* There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984 2385

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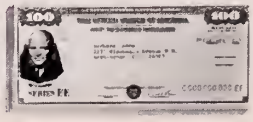


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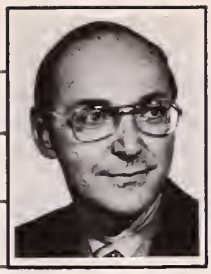


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OUR MAN IN EDUCATION



BOOKS THAT MATTERED

THE LOCAL PUBLIC LIBRARY recently sent a questionnaire, to whom all I don't know, but their single question seemed an intriguing challenge that gave me trouble. They asked me to name the one or two books that "made the greatest difference to me, and why." I paused to wonder how many books I've read totally or in part since whenever it was that my reading began. It seems hard even to estimate, but probably the number lies in the many hundreds, possibly even a few thousand. When compared to all that have ever existed or are even now easily available, and even just in English, it's clear that whatever number is true for me, it's miniscule compared to that total.

A friend, recently retired, told me he'd looked forward to reading as his main activity and joy, but in these six post-retirement months he's scarcely cracked a cover — "just listened to music on the radio and slept a lot." He's depressed, I decided. Retirement can do that, of course. It worries me. Perhaps the prevention lies in building toward a strong reading program gradually so that the full dose suddenly at retirement doesn't cause illness (I'm thinking of the technique for increasing the increments of penicillin given to a penicillin-sensitive patient who "must" receive it).

But which one book? The Bible doubtlessly shapes the entire world view — for me and I suppose almost every other citizen of Western civilization. And that's as true for atheists as for fundamentalists. If I free-associate, there pops into my head *Gray's Anatomy*, or the fat, excellent textbook (*Dermatology*, by Pillsbury, Shelley and Kligman) that I read from cover-to-cover during the several months before I began my residency. That text was useful for me, I think, and exciting, partly because it was an uncommonly well-written medical book, which I've come to realize mostly in retrospect — but I'm not sure I'd urge such a procedure on anybody else about to begin specialty training. The trouble with these and other answers from my personal list of "great books" was that the impact of any one of them, though great, was relatively diffuse; I couldn't pinpoint a startling or even specific effect. Although I recall how delighted I was with the ingenuity and charm of Dr. Suess's *The Cat in the Hat* when first I read it to our firstborn, it didn't influence my knowledge, behavior or attitude in a clearly demonstrable or measurable way except to make me read it over and over to our children and to buy it as my favorite gift to friends on the birth of their firstborn. Maybe that *should* count as a lot of influence.

"Books, collectively, have mattered enormously to me. Perhaps I'm not overstating, since I'm not an ardent Freudian, if I say that both directly and indirectly they may be given credit or blame for most of what I am and do."

So what made the "greatest difference?"

It is exceedingly difficult to choose. Books, collectively, have mattered enormously to me. Perhaps I'm not overstating, since I'm not an ardent Freudian, if I say that both directly and indirectly they may be given credit or blame for most of what I am and do. But finally, two works come to mind, not because they are intrinsically great, nor would I put them on a

(Please turn to page 286)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW



Reynold Spector, M.D., Editor

THE TOPICAL AND SYSTEMIC TREATMENT OF ACNE VULGARIS

The treatment of acne vulgaris is dependent upon the clinical expression of the disease. Acne consists of noninflammatory lesions (closed and open comedones) and inflammatory lesions (papules, pustules, nodules, and nodulocystic lesions). An abnormal pattern of follicular keratinization results in comedonal lesions; therefore, if noninflammatory lesions predominate, therapy should be oriented to reverse this abnormal pattern of keratinization. On the other hand, if inflammatory lesions are predominant, most of the major emphasis should be placed on decreasing the follicular *Propionibacterium acnes* population and/or the generation of extracellular inflammatory products of *P. acnes* (lipases, proteases, hyaluronidase, chemotactic factors). Drugs that have an anti-inflammatory effect are also used, and in severe treatment-resistant acne, therapeutic agents that decrease sebaceous gland activity may be used. Unfortunately, the drugs currently available to decrease sebaceous gland activity have potential side effect patterns that preclude their use in all acne patients. Topical and systemic therapy are discussed here. Acne surgery (the removal of the superficial noninflammatory and inflammatory lesions) is beyond the scope of this review.

Topical Therapy

Benzoyl peroxide: Benzoyl peroxide's prime mode of action is mediated through its bacteriostatic action against *P. acnes;* therefore, it is the topical treatment of choice in inflammatory acne. It is believed that the bacteriostatic action is related to the release of nascent oxygen. Benzoyl peroxide also has a slight effect on follicular keratinization, but it is not as active as either vitamin A acid or salicylic acid and, therefore, is not indicated in patients with comedonal acne, unless one of these latter 2 drugs cannot be used. The active drug must be present on the skin surface in great enough concentration and for long enough to allow penetration into the follicular canal. Therefore, benzoyl peroxide preparations, as well as all topical preparations used for acne, should be applied once or twice daily and not washed off for several hours.

Benzoyl peroxide is available as a lotion, cream, or gel (both water base and acetone base). The lotion and cream are available in 5% and 10% concentrations; the gel is available in 2.5%, 5%, and 10% concentrations. In general, the gel preparations are therapeutically more active, but they also may produce more drying and be more irritating. Also, the potential for irritancy increases with an increase in the concentration of the active material. A few patients may develop an allergic contact dermatitis to benzoyl peroxide, but true contact allergy is much less common than a primary irritancy reaction. While benzoyl peroxide washes are available, they are less effective because of their short contact time on the skin. Benzoyl peroxide preparations may cause some bleaching of colored hair or fabric; patients should be warned of this possibility.

Benzoyl peroxide has been reported to be a tumor promoter in an animal two-stage carcinogenesis model, but there is no evidence that benzoyl peroxide has any tumor-promoting activity in humans. The drug has been used safely for close to 20 years.

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

Vitamin A acid: This agent exerts its effect through a reversal of the pattern of abnormal keratinization, probably through a decrease in the cohesiveness of the intrafollicular keratinized material. As such, it is considered a comedolytic agent and is the prime agent for the management of noninflammatory acne. While vitamin A acid does not have any direct antibacterial or anti-inflammatory activity, it also is of value in inflammatory acne, as these lesions arise from closed comedones.

Vitamin A acid is available as a cream (0.05% and 0.1%), a gel (0.01% and 0.025%), and a solution (0.05%). The creams are the least likely to produce irritation while the solution is the most irritating. Therefore, vitamin A acid therapy should be started with a cream or gel preparation, and the solution is indicated only when tolerance has developed to the other forms of vitamin A acid. Because of irritation, some patients may only be able to use the preparation every 2 or 3 days, especially when first starting therapy. There is less irritation if vitamin A is applied at least one-half hour after washing. There may be an initial flare of acne when vitamin A acid is used (this is different than the irritation produced by the compound). Comedones become softer and often are extruded spontaneously; those that remain are easier to remove with a comedo extractor.

Topical vitamin A acid can cause an increased response to sunlight; therefore, it is best to use it at night, although it is not known if the mechanism of the photoaugmentation is due to photosensitivity or epidermal changes produced by the drug. Some patients may need to use sunscreens while using vitamin A acid. Vitamin A acid has been reported to act as a tumor promoter in a two-stage carcinogenesis model with ultraviolet light acting as the tumor initiator. However, the results of the animal studies have not been consistent from study to study; and while vitamin A acid has not been used as long as benzoyl peroxide, there also is close to 20 years of clinical experience without any evidence of tumor development in humans.

Topical antibiotics: The rationale for the use of topical antibiotics is obviously due to their antibacterial activity. Preparations containing

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tetracycline, erythromycin, clindamycin, and meclocycline are commercially available. All of the antibiotics are suspended in liquid vehicles except for meclocycline, which is compounded in a cream base. Topical tetracycline is probably less effective than the other preparations. Where dryness is of concern, the meclocycline preparation may be preferable because it is in a cream base. As with other topical acne agents, it is recommended that topical antibiotics be used twice daily. They are most effective in mild to moderate acne and have not replaced the use of systemic antibiotics in the more severe cases of acne.

Salicylic acid: Salicylic acid preparations are comedolytic. Salicylic acid is not as effective as vitamin A acid; however, it is of use in patients who cannot tolerate vitamin A acid. The comedolytic activity of salicylic acid is greater than that of benzoyl peroxide.

Systemic Therapy

Antibiotics: Antibiotics, and in particular tetracycline, are the most commonly used systemic drugs for acne. The antibiotics that are effective in the management of acne decrease the *Propionibacterium acnes* population within the follicle. While this antibacterial mechanism is obviously important, it should be stressed that acne vulgaris is not a bacterial disease and the clinical effect is mediated through a decrease in the production of extracellular inflammatory components. The antibiotics may have other direct anti-inflammatory activities such as the inhibition of neutrophil chemotaxis and a decrease in lipase production.

Initial dosing with tetracycline is usually on the order of 750 to 1000 mg/day in split dosages. Tetracycline is often continued for long periods of time with a maintenance dose of 250 to 500 mg/day. A few patients with very severe disease will benefit from the administration of dosages as high as 2 to 3 grams/day. At this level, hemograms and liver function tests are indicated at frequent intervals.

In spite of the fact that tetracycline therapy is often prolonged, the side effects are minimal. A small percentage of women will develop a yeast vaginitis while taking tetracycline or other broad spectrum antibiotics. A few patients may develop a gram-negative folliculitis during long-term therapy. The gram-negative organisms colonize the nasal mucosa and spread onto the adjacent skin surface. The onset of a gram-negative folliculitis should be suspected if a patient on long-term antibiotic therapy develops highly inflamed pustules or nodules that are clustered around the midline of the face. Cultures are required to confirm the diagnosis. The emergence of true resistance to *P. acnes* is fortunately rare after the use of the broad spectrum antibiotics.

Tetracycline, of course, should not be given to pregnant women because of the potential deposition of the antibiotic in the deciduous teeth producing a yellow staining of the teeth. Tetracycline may also inhibit skeletal growth when given to young children.

Erythromycin is a satisfactory alternative antibiotic agent, particularly when patients find it hard to take tetracycline on an empty stomach. The dosage schedule is the same as for tetracycline. Clindamycin has been used, but since its use can produce a pseudomembranous colitis due to clostrial exotoxins, it is rarely used. Minocycline in dosages of 100 to 200 mg/day is probably more effective than tetracycline or erythromycin, but the cost is considerably greater; and therefore, it is customary to use it in patients who have not shown a response to tetracycline or erythromycin. Trimethoprim-sulfa combinations also may be used in patients who do not have a satisfactory response to other antibiotics.

Isotretinoin therapy: This drug has revolutionized the care of patients with severe nodulocystic acne. It has major side effects and should be restricted in its use to those with very severe acne. It has been discussed in a previous University of Iowa Drug Letter (*Drug Letter*, Volume 23, Number 1, January 1984 and *Iowa Medicine*, 170-71, April 1984) and will not be dealt with in detail herein. However, certain points need to be emphasized. Isotretinoin should be used for 16 to 20 weeks in a dosage of 0.5 to 1.0 mg/kg/day in the average patient requiring this form of therapy. If there is marked involvement of the back or chest, the dose can be increased to 1.5 to 2.0 mg/kg/day. If therapy needs to be repeated, there should be an eight-week interval between the courses of therapy. In the dosages used, all patients will have evidence of chronic hypervitaminosis A. Integumentary side effects are predominant (cheilitis, dry skin, pruritus, dry mucous membranes, scaly dermatitis, conjunctivitis, epistaxis). A reversible dose-de-

pendent elevation of plasma triglycerides may occur and this is accompanied by a decrease in plasma HDLs. Pseudotumor cerebri is a rare side effect, but patients with a complaint of global headaches or other signs of increased intracranial pressure such as nausea or vomiting should be checked for this possibility. Recently, minimal bony hyperostoses involving the ligamentous areas of the spine have been observed. To date these have been asymptomatic and not related to the musculoskeletal pain that occurs in about 20% of patients. Nonetheless, the long-term potential of these bony hyperostoses remains to be determined. Isotretinoin is a potent teratogen, exerting its effect early in pregnancy at the time of organogenesis. However, it is not a mutagen. The characteristic lesions involve the central nervous system, the ears, and the vascular system. All women with child-bearing potential must have a pregnancy test before starting therapy, should have a normal menstrual period after this test, and then be on an effective contraception program throughout therapy and for one month after therapy is stopped. Many other side effects have been seen with isotretinoin therapy, which may or may not be drug related. These are discussed in the package brochure, which should be read in detail by all those who are planning to prescribe isotretinoin. Furthermore, the drug should only be prescribed by physicians who are thoroughly familiar with the side-effect patterns of the drug and the correct monitoring procedures.

Corticosteroids: Corticosteroids can be used in *low* dosages for their activity in suppressing sebaceous glands or in *high* dosages for their anti-inflammatory activity. The use of corticosteroids in once-daily dosages of 5 to 7.5 mg of prednisone or 0.25 to 0.5 mg of dexamethasone at night is indicated in patients with treatment-resistant acne in whom increased adrenal androgen production can be demonstrated. When high-dose therapy, employing as much as 40 mg of prednisone per day, is used, obviously the primary effect is anti-inflammatory although these dosages also suppress the sebaceous gland. High-dose therapy should be of short-term duration because of the potential for the development of side effects. Anti-inflammatory activity may be obtained without the systemic side effects through intralesional injection of corticosteroids.

Estrogens: Prior to the availability of isotretinoin, high-dose estrogen oral contraceptives were used to treat women with chronic acne. Estrogens in dosages of 75 to 100 micrograms of ethinyl estradiol or its equivalent suppress sebaceous gland activity. Therefore, oral contraceptives with a high estrogen content are needed, increasing the risk of side effects. The response to estrogen therapy is slow, often requiring 4 to 6 months of cyclic use. Relapses may occur after therapy is discontinued. The combination of estrogens and low-dose corticosteroids, both of which inhibit the sebaceous glands, has proven to be therapeutically superior to the use of either agent alone. In Europe estrogens have been given with an antiandrogen, cyproterone acetate, with good results.

Sulfones: Dapsone in a dosage of 50 to 200 mg daily may be of benefit in highly inflammatory acne. Its mechanism of action is unknown, but it probably acts as an anti-inflammatory agent. Dapsone will produce a severe hemolytic anemia in patients with a glucose-6-phosphatase deficiency, so that enzyme levels should be within normal limits before therapy is started. A drop in hemoglobin is expected in all patients treated with dapsone. Methemoglobinemia is also to be expected. Patients must be carefully monitored with hemograms including reticulocyte counts during dapsone therapy. The use of dapsone for acne is limited now that isotretinoin is available. — JOHN S. STRAUSS, M.D., *Professor and Head, Department of Dermatology*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

PUBLIC HEALTH NURSING GRANT RULES REVISED

THE IOWA STATE DEPARTMENT OF HEALTH has provided state funds to local boards of health to help support public health nursing services since 1977. The current state appropriation is just over 2 million dollars and is allocated to the counties by a formula. Typically the grant funds comprise about 13% of the total budget of the public health nursing agency.

The Department has recently adopted revised rules on these funds. The revised rules are significantly more detailed than the previous ones. They are organized in two major sections. The first section outlines the responsibilities of the local board of health regarding the grant funds; the second section identifies provider agency responsibilities.

The funds are contracted by law to the local boards of health. The boards are allowed to provide the service with their own staff or subcontract with a governmental or non-profit agency. In accepting the funds the local board of health agrees to comply with the rules which state in part:

"470-79.4(135) Local board of health responsibility. The local board of health shall establish a plan for the provision in homes and community settings of generalized public health nursing services for the residents of the jurisdiction. This plan shall cover provision of no less than the following components:

79.4(1) Needs assessment. Review and annually update a written assessment of public health needs and resources of the community. This should be done in coordination with related community agencies and organizations.

79.4(2) Communicable disease control.

79.4(3) Risk reduction and health promotion.

79.4(4) Maternal and child health.

79.4(5) Nursing care to individuals in their homes.

a. Provide part-time intermittent nursing care in the home to individuals with medical diagnosis(es) through an agency certified as a home health agency by the Health Insurance Benefits Program (Medicare).

b. Each agency shall, not less than annually, complete a cost analysis to determine the cost of providing a unit of service. A sliding fee scale based on income and family size for the home care component of the public health nursing services shall be established and used for those people able to pay all or a part of the cost of service. The sliding fee scales shall be used as guidelines with additional circumstances taken into account in determining with the patient the fee that will be paid. The exceptions based on additional circumstances shall be applied in a consistent manner.

c. Medicare, Medicaid and health insurance carriers shall be billed in all appropriate cases for services provided.

79.4(6) Evaluation. Evaluate the total public health nursing program according to a written evaluation plan each year. The evaluation shall assess the extent to which the total public health nursing program is appropriate, adequate, effective and efficient.

These broad requirements should help to assure the continuation of generalized public health nursing services throughout Iowa.

As indicated the services may be provided by agencies under board of health auspices or by separate agencies who are granted sub-con-

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tracts by the board of health. In either case the provider agency must meet the following standards.

STANDARD I — Legal authority to operate in conformity with all laws and rules.

STANDARD II — Plan and provide programs in accordance with the agency's purpose, in relation to community health needs and the total community health program. There shall be established priorities, policies, procedures, measurable objections and the agency shall provide a specified amount of health promotion services.

STANDARD III — The agency shall have a personnel management system.

STANDARD IV — The agency shall maintain administrative, fiscal, personnel and case records which include specified information and are accessible to authorized representatives of the Department. The agency shall submit, no less than annually, a copy of the Health Care Financing Administration Cost Report or an alternate cost report approved by the Department. The agency shall also submit, not less than quarterly, a statistical report of services provided, on forms approved or provided by the Department.

STANDARD V — The agency shall have a written plan for evaluation of the responsibilities assigned to it in the board of health's plan.

The funds will be budgeted on a purchase of service basis in each county's contract. "The state grant funds shall only be billed for nursing visits not reimbursed by third party payers or the portion not paid by the recipient on the sliding fee scale. The state grant funds may also be billed for health promotion home visits determined by the Health Care Financing Administration Cost Report or an alternate cost report approved by the department."

We do not expect these revised rules will result in major changes in current programs but they should help to clarify responsibilities. For further information or a copy of the rules, please contact your local board of health or Darleen Sickert, R.N., M.P.H., director, Public Health Nursing Section, Division of Family and Community Health, Iowa State Department of Health, Lucas State Office Building, Des Moines, Iowa 50319. 515/281-4912.

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Diseose	April 1986 Totol	1986 to Date	1985 to Dote	Most April Coses Reported Fram These Caunties
Aids	0	8	2	
Amebiosis	3	14	18	Boone, Johnson
Brucellosis	1	1	0	Chickasow
Chickenpox	1239	4923	4140	Scattered
Compylabacter	15	56	42	Scattered
Cytamegolovirus	1	9	2	Polk
Eatons Agent				
Infectian	1	4	6	Johnson
Encepholitis, virol	1	3	10	Cloyton
Erythemo Infectiosum	58	58	0	Scottered
Gostroenteritis (GIV)	1320	9643	8267	Scottered
Giardiasis	23	107	91	Scottered
Hepotitis, A	3	13	10	Hancock, Linn, Polk
Hepatitis, B	8	30	37	Scottered
Hepotitis, Non A-B	2	7	5	Foyette, Grundy
Hepotitis				
type unspecified	0	0	4	
Herpes Simplex	68	388	311	Scottered
Herpes Zoster	0	0	0	
Histoplosmosis	4	9	3	Crowford, Pocohontas, Polk, Tomo
Infectious				
mononucleosis	12	109	84	Scottered
Influenzo,				
lob confirmed	28	241	166	Scottered
Influenzo-like				
illness (URI)	2844	66261	21754	Scottered
Legionellosis	0	4	2	
Molorio	0	1	1	
Meningitis				
aseptic	1	7	11	Clinton
bocteriol	10	33	49	Scottered
meningacaccal	0	6	7	
Mumps	5	10	7	Linn, Muscotine, Pacohontos, Scatt
Pertussis	1	5	3	Polk
Robies in onimols	21	54	58	Scottered
Reye Syndrome	0	0	4	
Rheumotic Fever	4	5	0	Block Howk, Decotur, Josper, Mahosko
Rubello				
(German measles)	0	0	0	
Measles	1	1	0	Johnsan
Solmonellosis	4	40	47	Adair, Keokuk, Polk
Shigellosis	0	3	8	
Toxic Shock				
Syndrame	1	4	5	Linn
Tuberculasis				
totol ill	3	14	27	Johnson, Page, Wopella
boct. pos.	2	13	25	Poge, Wapello
Typhaid Fever	0	1	0	
Venereal diseoses:				
Gonarrhea	277	1166	1386	Scattered
Chlomydio	162	720	11	Scattered
Syphilis	0	5	12	

Other Nan-Repartable Diseases: Ascaris — 1, Winneshiek; Ratrovirus — 2, Allamokee, 1, Linn; Ureolytico Urealyticum — 1, Washingtan.



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OUR MAN IN EDUCATION

(Continued from page 279)

list of "great books," or "must read." They did, however, each make something happen in my life in a way that I particularly remember, and changed my attitudes and behavior quite sharply, and that specificity is more than I can say of most works.

One is *The Feminine Mystique* by Betty Friedan (read on the command of my wife — the only book she has ever *assigned* me). As it did to many others, this book awoke me to the modern issues and crusade regarding feminism and sexism. The effect was like a wet-towel-slap. The other work was *The Complete Sherlock Holmes* by Arthur Conan Doyle, a pleasant diversion I first read in my early twenties. But when I re-read it at about age 48, after having attended, at a friend's instigation, a meeting of a Sherlock Holmes Society, it propelled me into a new hobby which has brought me many delightful hours of reading, searching, writing, and even the publishing of imaginative fiction.

What book mattered to you?

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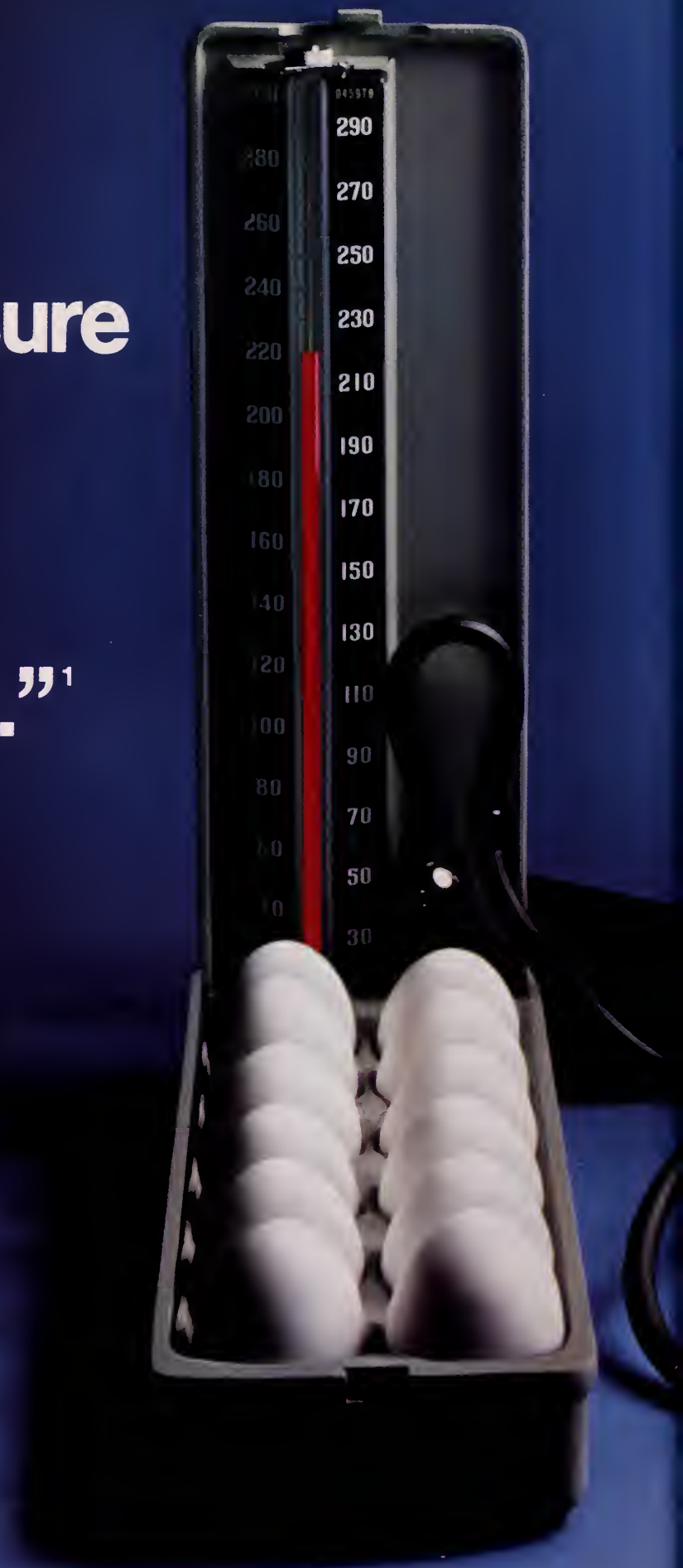
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If your patients have hypertension, they probably have high cholesterol too.

The Framingham Heart Study[2] showed that over two thirds of the 35 and older population in that study with systolic blood pressures over 145 mmHg also had serum cholesterol levels of 225 mg/dL or more, and 46% had levels above 250 mg/dL.

While many clinical laboratories still report 250 mg/dL as "normal" cholesterol, the NIH Consensus Development Conference Statement on Cholesterol and Heart Disease[3] stated that any level above 220 mg/dL is associated with a significantly increased risk of coronary heart disease.

You need to know, because high cholesterol parallels high blood pressure as a CHD risk factor.

Epidemiological studies and large-scale prevention trials have indicated that as with blood pressure, serum cholesterol levels are proportionately related to CHD risk.

Specifically, *"...for every 10 mmHg rise in pressure, there appears to be about a 30% rise in cardiovascular risk."*[4] *"...for every one percent you go up the American cholesterol scale, your subsequent rate of heart attack rises two to three percent."*[5]

And although the specific impact on CHD has not been determined, we know that many of the principal agents used to lower blood pressure actually increase cholesterol.

Wytensin® lowers blood pressure effectively without raising cholesterol.

While Wytensin is not a cholesterol-lowering agent and is not indicated for the treatment of hyperlipidemia, in controlled clinical trials[6] it caused a slight, sustained decrease in total cholesterol without reducing the HDL fraction or altering serum triglycerides.

At the same time, Wytensin lowered blood pressure as effectively as hydrochlorothiazide, propranolol, clonidine or methyldopa. Drowsiness and/or dry mouth, the most frequent side effects noted with Wytensin, usually diminish or disappear over time. In fact, in double-blind studies to date, discontinuance of therapy for all side effects occurred in about 13% of patients.

WyTensin®
(guanabenz acetate)

Antihypertensive therapy that does not increase cholesterol



See important information on following page.

References: 1. Glueck CJ: Remarks in the symposium, *Blood Pressure, Cholesterol and Coronary Heart Disease*, Washington, D.C., March 31, 1985. 2. *The Framingham Study, An epidemiological investigation of cardiovascular disease*, Section 28, U.S. Dept. of Health, Education, and Welfare. 3. National Institutes of Health Consensus Development Conference Statement, 1984: Vol 5, No 7, p 4. 4. Chobanian AV: The influence of hypertension and other hemodynamic factors in atherogenesis. *Progress in Cardiovascular Diseases, XXVI* (3): 177, Nov/Dec, 1983. 5. Castelli WP: Remarks in the symposium, *Blood Pressure, Cholesterol and Coronary Heart Disease*, Washington, D.C., March 31, 1985. 6. Data on file, Wyeth Laboratories.

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Wytensin®
(guanabenz acetate)

Antihypertensive therapy that does not increase cholesterol

Brief Summary

Before prescribing, consult the complete package circular.

Indications and Usage: Treatment of hypertension, alone or in combinatioo with a thiazide diuretic

Contraindication: Known sensitivity to the drug

Precautions: 1 Sedation Causes sedation or drowsiness in a large fraction of patients When used with centrally active depressants, e g , phenothiazines, barbiturates and benzodiazepines, consider potential for additive sedative effects 2 Patients with vascular insufficiency Like other antihypertensives use with caution in severe coronary insufficiency, recent myocardial infarction, cerebrovascular disease, or severe hepatic or renal failure 3 Rebound Sudden cessation of therapy with central alpha agonists like **Wytensin** may rarely result in "overshoot" hypertension and more commonly produces increase in serum catecholamines and subjective symptomatology

INFORMATION FOR PATIENTS Advise patients on **Wytensin** to exercise caution when operating dangerous machinery or motor vehicles until it is determined they do not become drowsy or dizzy Warn patients that tolerance for alcohol and other CNS depressants may be diminished Advise patients not to discontinue therapy abruptly

LAB TESTS In clinical trials, no clinically significant lab test abnormalities were identified during acute or chronic therapy Tests included CBC, urinalysis, electrolytes, SGOT, bilirubin, alkaline phosphatase, uric acid, BUN, creatinine, glucose, calcium, phosphorus, total protein, and Coombs' test During long-term use there was small decrease in serum cholesterol and total triglycerides without change in high-density lipoprotein fraction. In rare instances occasional nonprogressive increase in liver enzymes was observed, but no clinical evidence of hepatic disease

DRUG INTERACTIONS **Wytensin** was not demonstrated to cause drug interactions when given with other drugs, e g , digitalis, diuretics, analgesics, anxiolytics, and antiinflammatory or antiinfective agents, in clinical trials However, potential for increased sedation when given concomitantly with CNS depressants should be noted

DRUG/LAB TEST INTERACTIONS No lab test abnormalities were identified with **Wytensin** use

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY No evidence of carcinogenic potential emerged in rats during a two-year oral study with **Wytensin** at up to 9 5 mg/kg/day, i e , about 10 times maximum recommended human dose In the Salmonella microsome mutagenicity (Ames) test system, **Wytensin** at 200-500 mcg per plate or at 30-50 mcg/ml in suspension gave dose-related increases in number of mutants in one (TA 1537) of five *Salmonella typhimurium* strains with or without inclusion of rat liver microsomes No mutagenic activity was seen at doses up to those which inhibit growth in the eukaryotic microorganism, *Schizosaccharomyces pombe*, or in Chinese hamster ovary cells at doses up to those lethal to the cells in culture In another eukaryotic system, *Saccharomyces cerevisiae*, **Wytensin** produced no activity in an assay measuring induction of repairable DNA damage Reproductive studies showed a decreased pregnancy rate in rats given high oral doses (9 6 mg/kg), suggesting impairment of fertility Fertility of treated males (9 6 mg/kg) may also have been affected, as suggested by decreased pregnancy rate of mates, even though females received drug only during last third of pregnancy

PREGNANCY Pregnancy Category C WYTENSIN® MAY HAVE ADVERSE EFFECTS ON FETUS WHEN ADMINISTERED TO PREGNANT WOMEN A teratology study in mice indicated possible increase in skeletal abnormalities when **Wytensin** is given orally at doses 3 to 6 times maximum recommended human dose of 1 0 mg/kg These abnormalities, principally costal and vertebral, were not noted in similar studies in rats and rabbits However, increased fetal loss has been observed after oral **Wytensin** given to pregnant rats (14 mg/kg) and rabbits (20 mg/kg). Reproductive studies in rats have shown slightly decreased live-birth indices, decreased fetal survival rate, and decreased pup body weight at oral doses of 6 4 and 9 6 mg/kg There are no adequate, well controlled studies in pregnant women **Wytensin** should be used during pregnancy only if potential benefit justifies potential risk to fetus

NURSING MOTHERS Because no information is available on **Wytensin** excretion in human milk, it should not be given to nursing mothers

PEDIATRIC USE Safety and effectiveness in children less than 12 years of age have not been demonstrated, use in this age group cannot be recommended

Adverse Reactions: Incidence of adverse effects was ascertained from controlled clinical studies in U S and is based on data from 859 patients on **Wytensin** for up to 3 years There is some evidence that side effects are dose-related Following table shows incidence of adverse effects in at least 5% of patients in study comparing **Wytensin** to placebo, at starting dose of 8 mg b i d

Adverse Effect	Placebo (%) n = 102	**Wytensin** (%) n = 109
Dry mouth	7	28
Drowsiness or sedation	12	39
Dizziness	7	17
Weakness	7	10
Headache	6	5

In other controlled clinical trials at starting dose of 16 mg/day in 476 patients, incidence of dry mouth was slightly higher (38%) and dizziness was slightly lower (12%), but incidence of most frequent adverse effects was similar to placebo-controlled trial Although these side effects were not serious, they led to discontinuation of treatment about 15% of the time In more recent studies using an initial dose of 8 mg/day in 274 patients, incidence of drowsiness or sedation was lower, about 20% Other adverse effects reported during clinical trials but not clearly distinguishable from placebo effects and occurring with frequency of 3% or less. Cardiovascular—chest pain, edema, arrhythmias, palpitations Gastrointestinal—nausea, epigastric pain, diarrhea, vomiting, constipation, abdominal discomfort Central nervous system—anxiety, ataxia, depression, sleep disturbances ENT disorders—nasal congestion Eye disorders—blurring of vision Musculoskeletal—aches in extremities, muscle aches Respiratory—dyspnea Dermatologic—rash, pruritus Urogenital—urinary frequency, disturbances of sexual function Other—gynecomastia, taste disorders

Drug Abuse and Dependence: No dependence or abuse has been reported

Overdosage: Accidental ingestion caused hypotension, somnolence, lethargy, irritability, miosis, and bradycardia in two children aged one and three years Gastric lavage and pressor substances, fluids, and oral activated charcoal resulted in complete and uneventful recovery within 12 hours in both Since experience with accidental overdosage is limited, suggested treatment is mainly supportive while drug is being eliminated and until patient is no longer symptomatic Vital signs and fluid balance should be carefully monitored Adequate airway should be maintained and, if indicated, assisted respiration instituted No data are available on **Wytensin** dialyzability.

Dosage and Administration: Individualize dosage A starting dose of 4 mg b i d is recommended, whether used alone or with a thiazide diuretic Dosage may be increased in increments of 4 to 8 mg/day every one to two weeks, depending on response Maximum dose studied has been 32 mg b i d , but doses this high are rarely needed.

How Supplied: (guanabenz acetate) Tablets, 4 mg, bottles of 100 and 500; 8 mg and 16 mg, bottles of 100

Revised 2/14/85

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Ad Council

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10. Asthma runs in my family.
11. I forgot to eat this morning.
12. I'm allergic to flowering magnolia."



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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. James C. Carr, New Hampton, was a recipient of the Iowa High School Athletic Association's Team Doctor Award during the State Wrestling Tournament in Des Moines. Dr. Carr was the State Champion at 103 pounds on New Hampton's 1957 title wrestling team.

Dr. John Hoffman has joined **Dr. Richard Kreiter** in the practice of orthopedic surgery in Davenport. Dr. Hoffman received the M.D. degree; interned and served his orthopedic residency at the University of Wisconsin. He completed a fellowship in sports medicine in Toronto, Canada and also studied at the Massachusetts Institute of Technology in Boston, Massachusetts, and the McArdle Cancer Research Lab in Madison, Wisconsin. . . . **Dr. Donald W. Todd,** Guthrie Center, recently was honored for his 17 years as chairman of the Guthrie County Board of Health. A plaque was presented to Dr. Todd in recognition of this service. **Dr. Steven R. Bascom,** Guthrie Center, will replace Dr. Todd on the Board.

Dr. Steven Rosebrock has joined the medical staff at Burlington Medical Center. Dr. Rose-

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brock received the M.D. degree at Northwestern University Medical School in Chicago; he had his family practice residency at the University of Nebraska. . . . **Dr. Reginald R. Cooper,** chairman, Department of Orthopaedics, U. of I. College of Medicine, has been named first vice president of the American Academy of Orthopaedic Surgeons. . . . **Dr. Theodore P. Roman,** Sioux City, was guest speaker at a recent meeting of the Sioux City Association of Life Underwriters. Dr. Roman's topic, "How Patients With a Heart Problem Can Live Longer." . . . **Dr. Donovan F. Ward,** Dubuque, former AMA president, has been named president-elect of the American Society of Abdominal Surgeons. Dr. Ward will assume his new post in February, 1987. . . . **Dr. John P. Jacobs,** Cedar Rapids, was presented the Team Doctor Award by the Iowa High School Athletic Association during the recent Boys State Basketball Tournament. Dr. Jacobs has served on the Board of Education of both the St. Jude Grade School and LaSalle High School and has been team doctor for LaSalle athletics since 1965.

Dr. Frank R. Richmond, Fort Madison, has retired after 65 years in medical practice. Dr. Richmond received the M.D. degree at the U. of I. College of Medicine and interned at Lying-In Hospital and Cook County Hospital in Chicago. Dr. Richmond is a life member of the Iowa Medical Society. . . . **Dr. Edeliro A. Escobar,** Fort Madison, is the new president of the Lee County Medical Society. Other officers are — **Dr. Stanley J. Hartznowitz,** vice president, and **Dr. Min Chung,** secretary-treasurer. Both are Keokuk physicians. . . . **Dr. Richard Peters** has joined the Family Health Clinic in Carroll. Prior to locating in Carroll, Dr. Peters was associated with St. Joseph's Hospital in Omaha. . . . **Dr. Whealen Koontz** has been named president of Mercy Hospital medical staff in Cedar Rapids. Other officers are — **Dr. William W. Eversmann, Jr.,** vice president and **Dr. Mary Anne Nelson,** secretary-treasurer. All are Cedar Rapids physicians. . . . **Dr. Edward J. Hertko,** Des Moines, recently opened the Midwest Diabetes and Endocrinology Center in West Des Moines. Dr. Hertko is former medical director of the Central Iowa Diabetes Education Center at Iowa

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Methodist Medical Center in Des Moines. . . . . **Dr. Stephen Vanourny** has been elected president of the medical staff at St. Luke's Hospital in Cedar Rapids. Other officers are — **Dr. Werner J. Friesen,** vice president and **Dr. James H. Boddicker,** secretary-treasurer. All are Cedar Rapids physicians.

Dr. John T. McCoy, Cedar Falls, has retired after 35 years in medical practice. In recognition of his longtime service to the community, the Sartori Memorial Hospital has named its intensive care unit in his honor. . . . **Dr. Behrouz Rassekh** has been appointed chief of staff at Mercy Hospital in Council Bluffs. . . . **Dr. Raphael J. Hennes,** longtime Oxford physician, has retired. Dr. Hennes received the M.D. degree at the U. of I. College of Medicine. He began medical practice in Oxford in 1931. . . . **Dr. Linda M. Iler** is new president of the medical staff at Stewart Memorial Community Hospital in Lake City. **Dr. Donald L. Skinner, Jr.,** was named vice president and **Dr. James C. Comstock,** secretary. All are Lake City physicians. . . . **Dr. Sam I. Kuramoto,** Webster City, has retired from medical practice. Dr. Kuramoto received his medical education at the University of Osteopathic Medicine and Health Sciences in Des Moines. He began medical practice in Webster City in 1944. . . . **Dr. Jagadamba Chalasani** has joined the staff at Keokuk Area Hospital. Dr. Chalasani received her medical education at Guntur Medical College in Guntur, India and interned in the Government General Hospital in Guntur. She served her residency in anesthesiology at Allegheny Hospital in Pittsburgh, Pennsylvania. Prior to locating in Keokuk, she was an assistant professor of anesthesiology at the University of Pittsburgh.

Dr. Heinz S. Jacobi has been named president of the medical staff at Allen Memorial Hospital in Waterloo. President-elect is **Dr. Hriden Basu** and secretary, **Dr. Joseph J. Dimartini.** All are Waterloo physicians. . . . **Dr. Donald E. Greydanus,** Des Moines, was guest speaker at a recent meeting of the 7th District, Iowa Nurses Association. His topic: The Depressed Adolescent. . . . **Dr. Donald G. Seibel** began medical practice in Clarksville in January. Dr. Seibel received the M.D. degree at the University of Alberta in Edmonton, Alberta, Canada and served his family practice residency with the Armed Forces in Cold Lake, Alberta, Canada. Prior to locating in Clarksville, he practiced medicine in Forest City, Arkansas. . . . **Dr. Carl R. Aschoff,** Cedar Rapids, has resigned as director of the Cedar Rapids Medical Education Program and Family Practice Residency based at Mercy Hospital to accept a similar post in the Persian Gulf country of Bahrain. Dr. Aschoff will be in charge of 24 resident physicians completing their medical education at the 700-bed hospital in the capital city of Manama and at 13 outlying health centers. Mrs. Aschoff will accompany him. . . . **Dr. Wilson L. Davis, Jr.** was elected president of the medical staff at Keokuk Area Hospital; **Dr. Timothy D. Peterson,** vice president; and **Dr. Lowell Barrows,** secretary-treasurer.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Special Arm Of Iowa Medicine

THERE IS A SPECIAL ARM of organized medicine in Iowa that deserves periodic recognition. It's been around since the 1950's. Its sole function is helping Iowans.

The Iowa Medical Foundation exists to engage in, promote and contribute to the support of educational and scientific activities and projects.

The current multi-faceted program of the Foundation reflects this early charge. In recent years, a pattern of diversification has become well-established.

Financial Aid For Tomorrow's Physicians

The Iowa Medical Foundation has 2 significant thrusts. One is represented by the Dr. George Scanlon Medical Student Loan Fund. Helping Iowans become physicians is the historical purpose of the Foundation.

The Foundation student loan fund honors Dr. George Scanlon, an Iowa City surgeon who inspired and guided the program for many years. During the past 3½ decades, Foundation money has been loaned to 529 medical students. The total amount loaned is $1.3 million.

Federal funding cutbacks and the spiraling cost of medical schooling have increased the need for financial aid among Iowa medical students. Of the total $1.3 million supplied to medical students $960,000 has been loaned in the last 15 years. $565,500 of this has been loaned since 1980.

In the 1985-86 academic year, loans totalling $93,050 were made to 29 students. These students came from 23 different Iowa communities. For the 1986-87 academic year, the Foundation board has allocated $150,000 for student loans; $125,000 of this is for students attending the University of Iowa College of Medicine.

Foundation loans are now available up to $5,000 per year for junior and senior medical students with Iowa ties.

Support For Worthy Projects

The Iowa Medical Foundation is also privileged to have the Dr. Henry Albert Physician Benevolence and Public Health Fund. Dr. Albert practiced medicine in Iowa and stipulated in his will that proceeds from his estate be used for activities and projects benefiting health and medicine. The Foundation has received $216,300 from this source since the mid-1960's.

The Albert Fund is available to help needy physicians and/or their widows. In this same vein, the Iowa Medical Society initiated an Assistance Program for Troubled Physicians in 1980. The APTP is available to help those Iowa physicians who are hampered by addiction or other problems.

In Summary

Over the last 12 years, the Foundation has received average contributions of $28,000 per year. Almost all of these contributions have come from physicians.

The Foundation is involved in various other activities beneficial to medicine and the health of Iowa's citizens. The Foundation has helped sponsor the Hawkeye Science Fair for many years and supports medical student activity in organized medicine. The Foundation continues its involvement in the Iowa Coalition for Comprehensive School Education, which sponsors an annual health education conference.

The Iowa Medical Foundation is an organization of which the physicians of Iowa can be proud.

June 1986

Iowa Medicine

EXCERPTS FROM A SYMPOSIUM
"THE TREATMENT OF SLEEP DISORDERS"[8]

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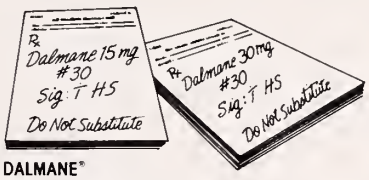
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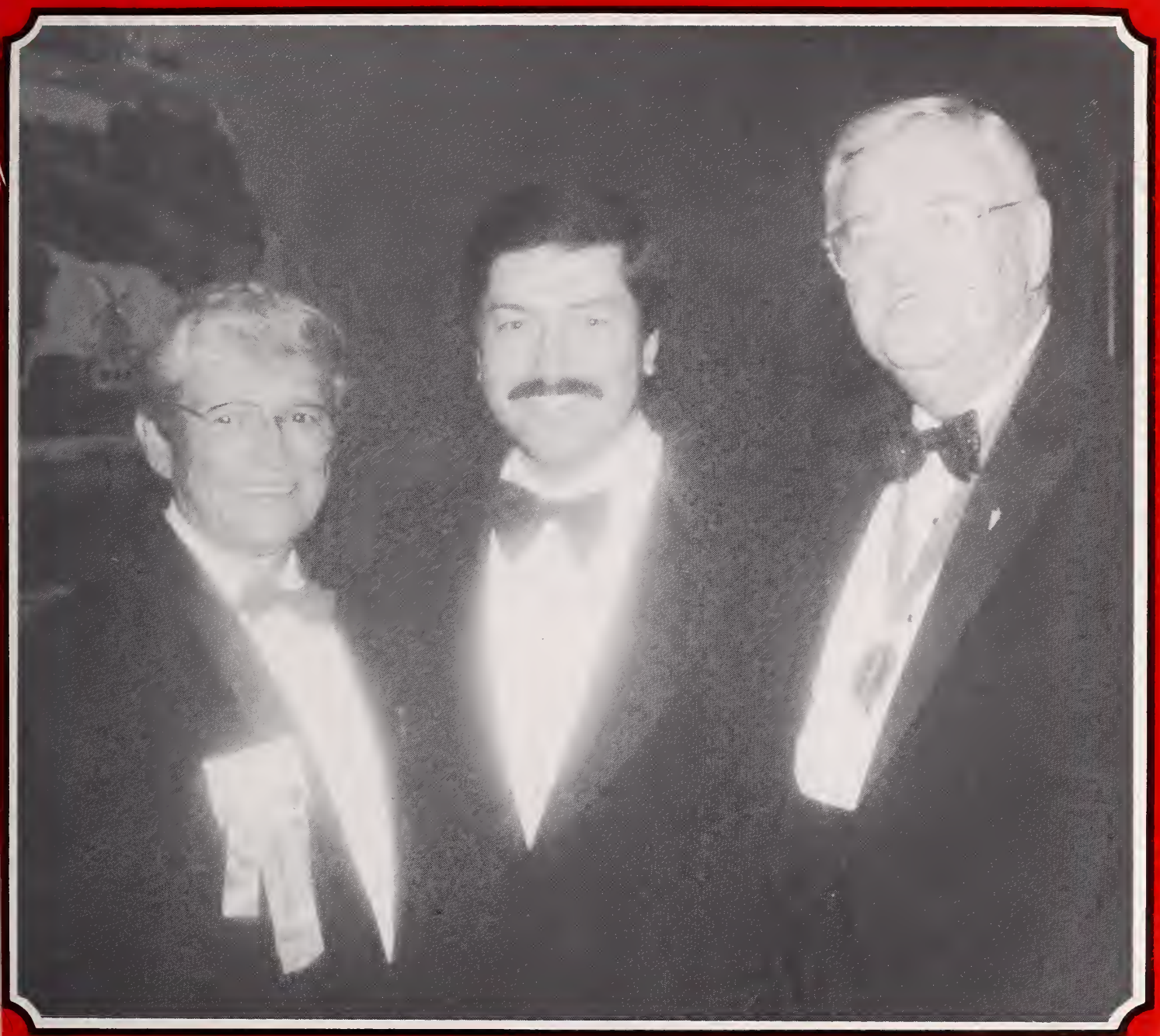
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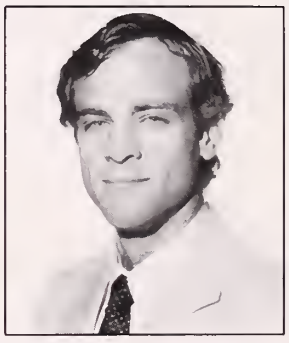


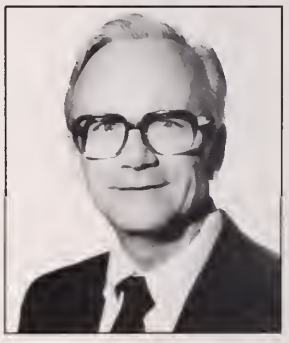


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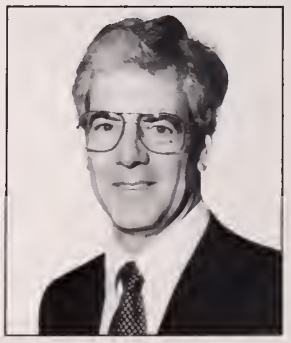


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July 1986

IowaMedicine

Volume 76 Number 7

Journal of the Iowa Medical Society

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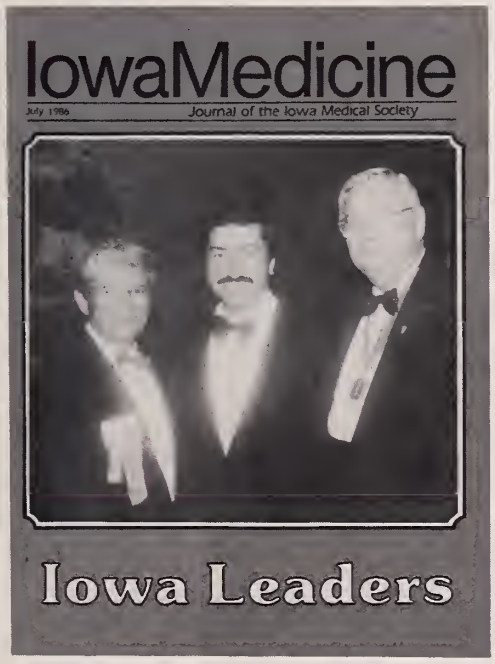
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ABOUT THE COVER



ABOUT THE COVER — Cover photo shows Iowa Governor Terry Branstad, guest speaker at the April 19 IMS House of Delegates banquet, with (at left) L. Dean Caraway, M.D., Amana, the new IMS president and Emmett B. Mathiasen, M.D., Council Bluffs, outgoing IMS president. Pictorial highlights and a summary of the 1986 House of Delegates session begins on page 304.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-8709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: $15 per year. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

NATIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 South Blvd., Oak Park, Ill. 60302. Phone 312/383-8800

IOWA ADVERTISING: Contact Mrs. Polly Lynch, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265. Phone 515/223-1401

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CAN YOU IMAGINE the potential benefits for patients and for our profession if physicians communicated with 100% effectiveness?

Of course, it's unrealistic to expect anything to be perpetually perfect. It is realistic to expect physicians will constantly strive to improve their communication skills. It should also be our goal to never underestimate the potential value of these skills in any professional situation.

Much has been written and said about physician-patient communication. Discussed less often is the equally-important area of intraprofessional communication. Yet, each time a physician fails to communicate effectively with another physician the patient could be affected.

Ideally, lines of communication between physicians — including those in various specialties — should be wide open. Whether the situation involves 2 physicians caring for the same patient or a group of physicians with common concerns, there is no acceptable substitute for productive, preferably, verbal communication.

The practice of medicine places many demands on our time; but we must never be too busy to listen to the concerns of colleague physicians, nurses, therapists, pharmacists and other hospital staff.

I challenge you to take a hard look at your intraprofessional communications skills. Make a conscious effort to improve them. Take time to listen. Higher quality patient care will be the result.

L. D. Caraway, M.D.

L. Dean Caraway, M.D.
President

Summary of 1986 Actions — IMS House of Delegates

Setting Iowa Medical Society policy on key health care issues was the order of the day at the 1986 IMS House of Delegates April 19/20. Physicians from across Iowa represented their county medical societies to consider subjects such as health care delivery systems, medical manpower, organ transplantation and unified membership. You are encouraged to read this summary to better understand the issues addressed by the House of Delegates.

THE 1986 ANNUAL MEETING of the Iowa Medical Society House of Delegates was April 19-20 in Des Moines. Sessions of the House each day were chaired by W. C. Rosenfeld, M.D., Speaker. Open hearings were conducted by 4 reference committees on April 19. The Delegates' banquet occurred April 19 and was chaired by President Emmett B. Mathiasen, M.D.

The 1986 Iowa Medical Society Merit Award recipients were Warren V. Wulfekuhler, M.D., and Pablo R. Recinos, M.D. These Mason City physicians have provided major leadership in founding the Iowa Medical Society-sponsored IPMIT/AMACO professional liability insurance program.

April 19 Session

Registered for the April 19 session of the House were 169 delegates and 6 ex officio members. Minutes of the April 21, 1985 Annual Meeting and the October 13, 1985 Special Session of the House of Delegates were approved as summarized in the July, 1985 and November, 1985 issues of IOWA MEDICINE. Reports contained in the 1986 HANDBOOK FOR THE HOUSE OF DELEGATES were approved with the exception of the report of the Committee on Articles of Incorporation and Bylaws and the report of the Judicial Council. Both were referred to the Reference Committee on Reports of Officers and Articles of Incorporation and Bylaws.

Supplemental Reports

The following reports were made to the 1986 House of Delegates:

Board of Trustees, by Dennis J. Walter, M.D., chairman. Included was a wrap-up of the IMS tort reform campaign and a 1-year status report on the IPMIT/AMACO Professional Liability Insurance Company. IPMIT representatives Warren V. Wulfekuhler, M.D., Pablo R. Recinos, M.D. and Donald C. Young, M.D. submitted reports on the following aspects of IPMIT operations; underwriting, marketing, claims adjudication and risk management.



HOUSE SPEAKERS — 1986 House of Delegates sessions were chaired by (left) Donald L. Kahle, M.D., Dubuque, vice-speaker, and William C. Rosenfeld, M.D., Mason City, speaker.

Judicial Council, by Robert L. Kent, M.D., chairman. This report stressed the importance of membership recruitment.

Necrology, by Robert L. Kent, M.D., chairman, Judicial Council.

Nominating Committee, by K. K. Judiesch, M.D., chairman. The committee announced support for a Judicial Council decision allowing physicians to run for both AMA delegate and AMA alternate delegate seats.

Committee on Legislation, by Clarence H. Denser, Jr., M.D., chairman. This report commended physicians who were instrumental in the tort reform campaign, including legislative contact physicians, grassroots action team members and 19 physician spokespersons.

Iowa Medical Political Action Committee (IMPAC), by Jackson D. VerSteeg, M.D., chairman.

Iowa Medical Foundation, by Dennis J. Walter, M.D., president, Foundation Board of Directors.



MERIT AWARD WINNERS — Pablo R. Recinos, M.D. (left) and Warren V. Wulfekuhler, M.D. (right), shared the 1986 Iowa Medical Society Merit Award. The two Mason City physicians are pictured with Dennis J. Walter, M.D., Des Moines, IMS president-elect.





AWARD WINNERS — Jomes D. Collins, Jr., M.D., Woterloo (above left), received the Ben T. Whitoker Interstote Teoching Award ot the IMS onnuol bonquet April 19. Donold F. Rodowig, M.D., Spirit Lake, presented the oword. Above right, Dovid Crosson of the Iowa State Historical Deportment receives the Iowa Medical Society's Woshington Freeman Peck Aword from outgoing IMS president Emmett B. Mothiasen, M.D., Council Bluffs.

Blue Shield, by Clarkson L. Kelly, Jr., M.D., chairman, Blue Shield Board of Directors.

Iowa Foundation for Medical Care, by Charles Jons, M.D., president, IFMC.

Two checks from the AMA-Educational and Research Foundation were presented by Dennis J. Walter, M.D., chairman, IMS Board of Trustees, to the University of Iowa College of Medicine. One check was for $10,462.21, an unrestricted grant; the other in the amount of $7,905.77 was designated for medical student assistance. John W. Eckstein, M.D., dean, U. of I. College of Medicine, accepted the checks on behalf of the University.

Supplemental reports were noted as being in the delegates packets from: Committee on Medical Service; Committee on Public Assistance; Committee on Alternate Delivery Systems; Committee on Emergency Medical Services and Committee on Delivery of Health Services. They were not read.





CITED FOR SERVICE — Outgoing IMS president Emmett B. Mothiosen, M.D., Council Bluffs (at left) presented o recognition ploque to immediote post president John Tyrrell, M.D., Monchester, in oppreciotion of his years of IMS service. In the photo obove right, James Ross Lightfoot, U.S. Representotive, Fifth Congressionol District, oddresses attendees at Saturday evening's annual bonquet.



NEW LIFE MEMBERS — 1986 IMS Life Members present at the annual banquet were (front, from left) Albert J. Gantz, M.D., Greenfield; Paul J. Laube, M.D., Dubuque; Lawrence G. Schaeferle, M.D., Garwin; Irving J. Hanssmann, M.D., Council Bluffs; (back, from left) Ephraim L. Manning, M.D., Davenport; Thomas E. Kane, M.D., Boone; Robert C. Locher, M.D., Cedar Rapids; Henry H. Corn, M.D., West Des Moines; Rudolph A. Selo, M.D., Omaha; and Richardson E. Clark, M.D., Manchester.

In his comments to the House, President Mathiasen discussed the outcome of the IMS tort reform campaign and outlined future goals. Stressing a theme of "quality care at a reasonable cost," he said care of Iowa's elderly should continue to be a key IMS concern. Mathiasen's remarks were published in the June 1986 issue of IOWA MEDICINE.

Twenty-three resolutions were formally introduced and referred to reference committees. Actions taken on these resolutions are reported subsequently.

Life Members

The following physicians were elected to Life Membership in the Iowa Medical Society:

James W. Agnew, M.D., Bettendorf
Monroe P. Allison, M.D., Northwood
Samuel J. Altman, M.D., San Diego, Calif.
Raymond G. E. Bunge, M.D., Iowa City
Abner Buresh, M.D., Lime Springs
Richardson E. Clark, M.D., Manchester
Henry H. Corn, M.D., West Des Moines
Ellis Duncan, M.D., Louisville, Kentucky
Martin S. Esders, M.D., Davenport
Albert J. Gantz, M.D., Greenfield
Homer J. Gilfillan, M.D., Bloomfield
Irving J. Hanssmann, M.D., Council Bluffs
Carl A. Jacobs, M.D., Sioux City
Edward H. Sibley, M.D., Pharr, Texas
Thomas E. Kane, M.D., Boone
Edson C. Knight, M.D., Ventura, Calif.
Selig M. Korson, M.D., Sun City West, Ariz.
James W. Lannon, M.D., Mason City
Paul J. Laube, M.D., Dubuque
Ronert C. Locher, M.D., Cedar Rapids
Ephraim L. Manning, M.D., Davenport
F. L. Nelson, Jr., M.D., Ottumwa
Gardner D. Phelps, M.D., Waterloo
James J. Redmond, M.D., Cedar Rapids
Guido J. Sartor, M.D., Mason City
Lawrence G. Schaeferle, M.D., Garwin
Rudolf A. Selo, M.D., Omaha, Neb.
Paul Stephen, M.D., Cedar Rapids

The following physicians were elected to Associate Membership in the Iowa Medical Society:

Black Hawk: Edward J. Sitz, M.D., Waterloo
Calhoun: Paul Ferguson, M.D., Lake City
Cerro Gordo: William G. Rence, M.D., Mason City and Harold J. Roddy, M.D., Mason City
Clay: Lyle F. Frink, M.D., Spencer and William H. Myerly, M.D., Spirit Lake
Crawford: Robert A. Huber, M.D., Charter Oak
Des Moines-Louisa: John J. McElwain, M.D., Burlington

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1986 REFERENCE COMMITTEE CHAIRMEN — The faur physicians abave chaired 1986 House of Delegates' Reference Cammittees. Shawn fram left, Jahn M. O'Shea, M.D., Clintan, Cammittee on Legislation; Peter Stephens, M.D., Davenport, Committee an Medical Service; Larry W. Goetz, M.D., Crestan, Cammitee an Reports af Officers and Articles af Incarparatian and Bylaws; James W. White, M.D., Dubuque, Commitee on Miscellaneaus Business.

Dubuque: Richard V. McKay, M.D., Dubuque; Elvin E. Olin, M.D., Dubuque; Clark W. Stevens, M.D., Dubuque; and Robert D. Storck, M.D., Dubuque

Emmet: Hugo Lindholm, M.D., Estherville

Greene: Elvin D. Thompson, M.D., Jefferson

Jasper: Lewis D. Norris, M.D., Newton

Jefferson: Jack N. Morgan, M.D., Fairfield

Johnson: Harley G. Feldick, M.D., Rogers, Arkansas; Lloyd J. Filer, M.D., Iowa City; and Frederic W. Stamler, M.D., Iowa City

Linn: Walter M. Block, M.D., Cedar Rapids; William J. Moershel, M.D., Cedar Rapids; Robert A. Sautter, M.D., Cedar Rapids; Raymond A. Shank, M.D., Cedar Rapids; John F. Troxel, M.D., Cedar Rapids; and Campbell F. Watts, M.D., Cedar Rapids

Marshall: Harold E. Sauer, M.D., Marshalltown and Donald E. Tyler, M.D., Marshalltown

Mitchell: Robert B. Isham, M.D., Osage

Polk: Jerry A. Barnett, M.D., Des Moines; Lawrence O. Ely, M.D., Des Moines; John L. Fatland, M.D., Des Moines; John Hess, Jr., M.D., Des Moines; John J. Polich, M.D., Des Moines; Robert J. Porter, M.D., Des Moines; Paul H. Potter, M.D., West Des Moines; and Wayne L. Severson, M.D., Des Moines

The speaker presented information on the reference committee hearings, the balloting procedures and the concluding session of the House.

April 20 Session

Registered for the April 20 session of the House were 173 delegates and 5 ex officio members. The minutes of the April 19 session of the House were read and approved.

Mrs. Dorothy Carpenter, immediate past president, IMS Auxiliary, addressed the delegates and commented on joint projects undertaken by the IMS and the Auxiliary.

The following physicians were announced as having been elected or reelected to the position noted:

President-elect	**Dennis J. Walter, M.D., Amana**
Vice President:	**Enfred E. Linder, M.D., Ogden**
Speaker of the House:	**William C. Rosenfeld, M.D., Mason City**
Vice Speaker:	**Donald L. Kahle, M.D., Dubuque**
Trustee:	**Carol A. Aschenbrener, M.D., Iowa City**
AMA Delegate:	**Clarence H. Denser, Jr., M.D., Des Moines; John M. Rhodes, Sr., M.D., Pocahontas; and Donald C. Young, M.D., Des Moines**
AMA Alternate Delegate:	**Lawrence O. Goodman, M.D., Marshalltown and Eugene Johnson, M.D., LeClaire**

The speaker complimented the reference committees and asked the delegates to report

highlights of the meetings to their constituent physicians. Following adjournment of the House of Delegates, Lynn D. Caraway, M.D. was installed as president of the IMS for the coming year and addressed the House briefly. His inaugural comments were published in the June issue of IOWA MEDICINE. Organizational meetings of the Board of Trustees and the Judicial Council occurred immediately following the installation.

Highlights and actions of the Reference Committee reports are summarized as follows:

Reference Committee on Reports of Officers and Articles of Incorporation and Bylaws — Larry W. Goetz, M.D., Creston; Gordon A. Flynn, M.D., Davenport; Gene M. Kuehn, M.D., Mason City; Dale D. Morgan, M.D., Cedar Rapids; and Dwight G. Sattler, M.D., Kalona

House Action: Approved a unified membership requirement, i.e., physicians must be members of both the Iowa Medical Society and their component county medical society.

House Action: Directed appointment of a committee to investigate unified membership for all 3 federation levels (county/state/AMA), with a report to be presented to the 1987 House of Delegates.

House Action: Approved $25 annual dues for IMS resident members and directed that 1987 IMS dues remain at $300 for members.

House Action: Directed that all references to gender be removed from IMS Articles of Incorporation and Bylaws.

House Action: Commended IMS officers for their efforts in representing the interests of the membership.

House Action: Commended IMS officers and staff for keeping members informed on important developments affecting the medical profession through Society publications.

Reference Committee on Miscellaneous Business — James W. White, M.D., Dubuque; Henry M. Perry, M.D., Bloomfield; Robert C. Brown, M.D., Iowa City; John V. Fernandez, M.D., Council Bluffs; and Robert L. Kollmorgen, M.D., Des Moines.

House Action: Requested the University of Iowa College of Medicine to pursue with the State Board of Regents its plan to initiate a phased enrollment reduction.

House Action: Encouraged the College of Medicine to downsize its Physician's Assist-

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1986/87 IMS JUDICIAL COUNCIL — Members of the new IMS Judicial Council pictured are: (front, from left) Thomas C. Graham, M.D., Iowa Falls, District 11; Lester Beachy, M.D., Des Moines, District 8; Donald J. Soll, M.D., Denison, District 14; Robert L. Kent, M.D., Burlington, District 1; Max E. Olsen, M.D., Minden, District 13; R. Bruce Trimble, M.D., Mason City, District 12; (back, from left) Russell W. Conkling, M.D., Cedar Rapids, District 4; Sidney A. Smith, M.D., Oskaloosa, District 7; Tom Throckmorton, M.D., Spencer, District 15; Kent D. Miller, D.O., Waterloo, District 6; Robert T. Melgaard, M.D., Dubuque, District 5; Kenneth D. Dolan, M.D., Iowa City, District 2; Harold W. Miller, M.D., Davenport, District 3. Not pictured are: John H. Gay, M.D., Des Moines, District 9; James F. Black, M.D., Marshalltown, District 10; and Robert A. Boldus, M.D., Sioux City, District 16.

ants Training Program in correlation with any cutback in medical students.

House Action: Acknowledged that the IMS needs to continue to study matters of medical manpower in a thoughtful and extended manner.

House Action: Resolved that the IMS support pluralistic care delivery to include organ transplantation, so long as quality is fundamental.

House Action: Said the IMS should foster coordination and cooperation in organ transplantation under leadership of the Committee on Organ Transplantation.

House Action: Reaffirmed the importance of an IMS program to identify troubled physicians and facilitate the rehabilitation of these physicians.

House Action: Instructed the IMS Assistance Program for Troubled Physicians to review existing information materials produced by the AMA and other organizations with a view toward making the information available to hospital staffs, county medical societies and other physician organizations.

House Action: Requested the Committee on Organ Transplantation to consider preparing a brochure underscoring the importance of the organ donor program. The Committee is also to encourage more physician participation in organ retrieval.

House Action: Asked for more IMS effort to educate the public on the risk of tobacco use; also encourged member physicians to expand this patient education activity in their offices and hospitals.

House Action: Commended physician leaders of the IPMIT/AMACO Professional Liability Insurance Program for their risk management activity. Asked for further development of effective risk management programming to be made available to all member physicians.

House Action: Directed the IMS Board of Trustees to maintain an information clearing house on medical meetings which have statewide impact.

House Action: Instructed the IMS Board of Trustees to inform medical specialty groups of Society annual meeting dates to help avoid conflicts.

House Action: Requested contact with the AMA regarding eligibility for supplementary health insurance for senior physicians.

House Action: Directed the IMS to cancel



PAST PRESIDENTS — IMS post presidents were honored ot o speciol breokfast held during the onnual meeting. Those present were: (front, from left): Hormoz Rassekh, M.D., Council Bluffs — 1983; James F. Bishop, M.D., Dovenport — 1977; Russell S. Gerord, II, M.D., Waterloo — 1979; (back, from left) John E. Tyrrell, M.D., Manchester — 1985; Poul M. Seebohm, M.D., Iowa City — 1980; John H. Sunderbruch, M.D., Davenport — 1971 ond William R. Bliss, M.D., Ames — 1981.



1986/87 IMS BOARD OF TRUSTEES — The new IMS Board is pictured. Seated are: (from left) Dennis J. Walter, M.D., Des Moines, president-elect; L. Dean Caraway, M.D., Amana, president; Daniel M. Youngblade, M.D., trustee and board chairman; (back, from left) Donald F. Rodawig, M.D., trustee and secretary-treasurer; Carol Aschenbrener, M.D., Iowa City, trustee; Enfred E. Linder, M.D., Ogden, vice-president and Emmett B. Mathiasen, M.D., Council Bluffs, immediate past president.

the benefit programs of any member physicians (except in cases of true financial hardship) whose dues become delinquent.

Reference Committee on Legislation — John M. O'Shea, M.D., Clinton; James C. Carr, M.D., New Hampton; Leo J. Plummer, M.D., Des Moines; Jerry L. Jochims, M.D., Burlington; and Raymond D. Schamel, M.D., Fort Dodge.

House Action: Approved 6 resolutions submitted by the Committee on Emergency Medical Services. These include adoption of a protocol for alcohol-caused trauma evaluation and support for legislation making .05% blood alcohol content the per se legal impairment level for drivers.

House Action: Said the IMS should oppose complete decentralization of the University of Iowa indigent care program. The IMS is to work with University Officials and legislative committees on a indigent care program to cover locally the costs of low-risk pregnancy care for women who reside long distances from Iowa City.

House Action: Directed the IMS to initiate legislation to allow physicians to serve on all hospital boards of directors.

House Action: Resolved IMS support of legislation providing appeal mechanisms to rural hospitals located within 75 miles of urban areas to help them achieve equity in Medicare reimbursement. This topic is to be the subject of an IMS resolution to the 1986 AMA House of Delegates.

House Action: Called for the IMS to promote legislation prohibiting vending machine sales of tobacco products, raising the minimum legal age for purchasing tobacco to 21 and providing tougher penalties for the sale of tobacco products to minors.

House Action: Supported federal legislation to provide appropriate compensation to persons seriously injured as a result of state mandated immunizations, not merely as an alter-

(Please turn to page 312)

native to existing legal remedies. Further, the House directed the IMS to study the cost of the state providing vaccine for administration by private physicians.

House Action: Reaffirmed IMS support for Medicare policy revisions to permit direct access to skilled nursing facilities.

House Action: Resolved the IMS continue to inform its members of roll call votes of legislators when appropriate.

Reference Committee on Medical Service — Peter Stephens, M.D., Davenport; Sharon K. Goodwin, M.D., Waterloo; Homer L. Skinner, M.D., Carroll; William Wessels, M.D., Marshalltown; and Steven L. Wolfe, M.D., Spencer.

House Action: Reaffirmed IMS policy that physicians practicing in Iowa be reviewed by Iowa physicians with only IFMC physician representatives permitted to deny hospital admissions.

House Action: Resolved the IMS continue its liaison with the Iowa Foundation for Medical Care through Society representatives to the Provider Advisory Committee and joint meetings of officers of both organizations.

House Action: Said the IMS should inform it members periodically that the IMS has 3 representatives on the IFMC Provider Advisory Committee who are willing to assist members experiencing differences with the Foundation.

House Action: Encouraged the IFMC to eliminate inconsistencies in the interpretations by its nurse reviewers.

House Action: Urged that the IFMC communicate with physicians on Foundation policy changes in utilization review or peer review.

House Action: Requested the IFMC to work more closely with specialty societies to ensure appropriate medical input.

House Action: Resolved the IMS examine its organizational structure to better interface with specialty societies, particularly in the legislative and political arenas.

House Action: Asked that IMS leaders identify issues which cause divisiveness among physicians and work to resolve any differences.

House Action: Resolved the IMS Committee on Alternate Delivery Systems begin to develop a statewide alternate delivery system.

House Action: Resolved the IMS Committee on Alternate Delivery Systems continue to gather information on operational and proposed alternate delivery plans in Iowa and disseminate this information.

House Action: Resolved the IMS support AMA policy on the tax status of satellite clinics and other out-patient facilities operated by not-for-profit institutions. John J. Ring, M.D., member, AMA Board of Trustees, said the board is sympathetic to the issue of fairness but in its view, resolution of this matter will be difficult.

House Action: Instructed that the 1983 IMS credo of principle and philosophy entitled *These Are Our Beliefs* be updated and redistributed.

FUTURE MEETINGS

As the interim policy making body of the Iowa Medical Society, the Executive Council has scheduled meetings during the coming year on September 11, November 20 and January 15.

The 1987 meeting of the IMS House of Delegates will occur at the Savery Hotel in Des Moines on April 18-19.

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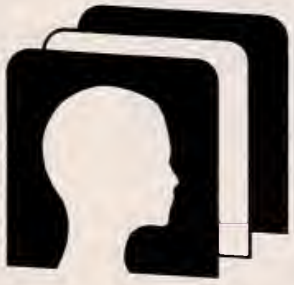
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Two Views of the Future

If current trends are carried to their logical extremes, what will health care delivery be like in the future? This 'worst possible scenario' — and what physicians can do to avert it — highlighted remarks by John J. Ring, M.D., AMA Trustee, to the 1986 IMS House of Delegates.

THIS MORNING, I want you to do some brainstorming with me. Let's look at the worst possible scenario for health care delivery in this country and then look at the best. Finally, I want to discuss briefly the current liability situation and what the AMA proposes.

Not long ago, I was thinking what might be the worst thing that could happen to American doctors and, more importantly, to our patients. It was not a pleasant exercise. I reached this worst possible scenario by imagining the current trends visible today would continue indefinitely and be carried to their logical extremes.

Primarily, I assumed a narrow concentration on the cost of care would continue without regard to other factors. By following this assumption, it isn't difficult to picture what medical care may be like in just a few years.

Third party payors, would gain the most. The cost of medical care for the people of this nation would not only be controlled but thoroughly and completely predictable.

Government programs and private carriers would know the exact maximum to be spent in any year for their beneficiaries. That would be true because each person would be allowed a specific amount for his or her health care. In addition, all beneficiaries would pay a large share of the premium plus large deductibles and co-payments. Once a maximum amount had been reached, there would be no more

Dr. Ring is a family practitioner in Mundelein, Illinois and has served on the AMA Board of Trustees since 1985.

care unless the individual could pay for it. It would be difficult to go beyond the stipulated amount — not because the limit would be so generous, but because the amount and kind of care would be determined by the payors.

Every procedure ordered by a doctor would need to be approved in advance. Once approved, each procedure — whether a routine innoculation, a series of treatments or major surgery — would command a specified payment to the physician from the carrier.

If hospitalization was required, the patient could be hospitalized only a set number of days. All payments for medical procedures, supplies, drugs, therapy and/or hospital care would be carefully calculated according to national averages for the various illnesses and conditions. If the specified and approved treatments, surgery or medication failed to solve the problem and the patient remained ill or died, it would be determined they fell outside those national averages.

Fortunately for medical and health statistics, such incidents would fall well within carefully developed and perfectly acceptable percentages of morbidity and mortality.

The rules I've been describing would not apply to people who could pay for care. There would be no limit on payment from one's own pocket. The well-off would enjoy the very best of care in whatever kind of facility they chose. In addition, the rules would not apply to people who could not pay for their care — the poor and the unemployed.

Those not qualifying for government programs, people with low-paying jobs whose employers chose not to provide health insurance, would go to church-sponsored and other privately maintained clinics providing minimum care at no cost. They would be staffed mostly by doctors and nurses retired from active practice and who could afford to volunteer time to help people who could otherwise not receive care.

There would be fewer doctors. The carriers would have stopped paying toward "frills" like medical research, medical education, postgraduate medical education and technology development. That would fall to the private sector. In many parts of the country, patients would be on waiting lists to see the few available doctors. More than half the hospitals would close. The level of care would be about the same patients received in the 70's and 80's because few new techniques, medications or technologies for diagnosis and treatment would be made. All in all, this is a pretty grim picture.

Fortunately, there is a second possibility. This one will result from our continued insistence on high quality cost-effective care delivered in a pluralistic system.

Physicians and other health care professionals would continue their diversification into more efficient, economical and convenient forms of practice. These would include the solo practitioner, hospital-based ambulatory care and ambulatory surgery centers, free-standing ambulatory surgery centers, residential and shopping mall urgent and routine care centers.

"In many parts of the country patients would be on waiting lists to see the few available doctors. More than half the hospitals would close."

It would also include not-yet-developed forms of custom medical care, all carried out with consideration of cost and effectiveness. There would also be a continuation of combination financing and delivery systems such as HMO's and PPO's, at greater efficiency and cost containment.

Beneficiaries of both private and governmental insurance programs would assume more responsibility for their care through premium sharing, deductibles and co-insurance; but not to a level that would deter them from getting the care needed. Those who have little or no resources would be cared for through governmental programs and private insurance risk groups. All payors would contribute their fair share toward the vitally-important medical education, scientific research and technology development so the quality of care and the level of its results would continue to rise to meet the needs of patients.

This much more desirable result can come about if the people want it and demand it from the private sector and from their government. However, if society sits back and permits the quality and availability of care to be sacrificed on the altar of cost, we are more likely to see

(Please turn to page 316)

the first possibility — the nightmare — come true.

As physicians, we have 2 responsibilities. We have always been leaders in providing care and we must be leaders in meeting these responsibilities. The first is to continue working with government, industry and society to make sure our nation never abandons its aspirations for high quality health care for all.

Second, to continue helping our members provide high quality care in the most cost-efficient, economical and effective manner possible. If we do this, and if society demands high-quality but cost-effective care, this dream of the future will come true — not the aforementioned nightmare.

One of the most important things we must do is bring order out of the chaos in professional liability. The AMA has put this item on the top of its priority list. We are not going to rest until this problem is solved. It looks like there's help coming from all directions. Liability is no longer just a medical problem, but a national problem.

The AMA has joined 200 other organizations in forming the American Tort Reform Association. We have also joined specialty societies and state medical associations in an effort to correct the situation. We have volunteered to become a clearinghouse for information on professional liability. Our communications division is preparing advertisements to call the attention of the public to this problem. We intend to develop an alternative plan to the current tort system.

We are not going to rest until this situation is corrected. The alternative is a diminution in the availability and quality of health care services available.

So there you have it, ladies and gentlemen. The health care system of the United States and the future of an honored profession — both subjects of societal decisions. It's up to us to influence these decisions. It's up to us to tell the public where their best interests lie. It's a job that must be done. It's a job that will be done with your help.

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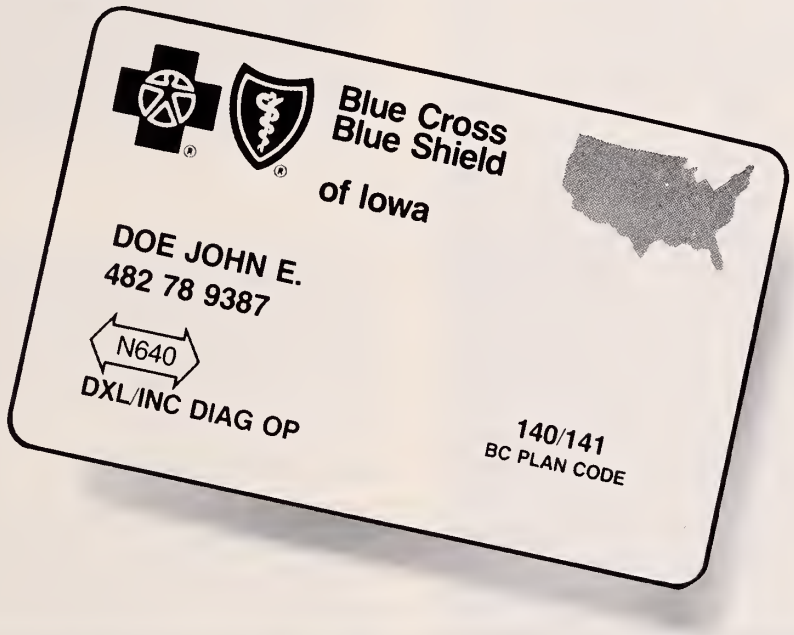
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Ron Saf Retires — Kept Tabs on Iowa Docs For 33 Years

Ronald V. Saf retires July 1, 1986 after 33 years as executive director of the Iowa State Board of Medical Examiners (BME). Through the years, Mr. Saf has become widely known to Iowa physicians for his work with the BME, and cooperative endeavors with the Iowa Medical Society. In 1973, he received the Society's John F. Sanford Award for distinguished service to medicine by a layman. Saf has worked for 9 different physicians who have chaired the BME during his state employment. Here, Saf reflects on his career and on the many changes the BME has experienced.

RON SAF predicts it's the "great relationships I've had with doctors over the years" he's going to miss the most.

A proven survivor of change and challenge, Saf officially retires July 1 after 33 years as executive director for the Iowa State Board of Medical Examiners. He readily admits that the plethora of change inundating the BME during the past decade is one reason he views his retirement with "mixed emotion."

"I'd have to say part of the reason I stayed so long is because there was very little change in the Board's composition and duties during the first 20 years," he says. "It was not until about 1975 that things really started to mushroom for the BME."

Only Regulated M.D.'s

Saf holds education and law degrees from Drake University. He went to work as an investigator and legal advisor to the Department of Health after law school graduation. He was hired by Dr. Walter Bierring, past president of the IMS and AMA and then Iowa Commissioner of Public Health. Saf became the BME executive director on July 1, 1953.

At that time, the Board was comprised of 5 physicians who dealt mostly with licensing and examination of Iowa M.D.'s. The Board operated on a trust fund financed from fees paid by physicians; it had no authority to conduct formal hearings on physician competence.

"The Board dealt with disciplinary matters infrequently. We handled them on an informal basis by having the physicians appear before the Board," Saf recalls. "Patient complaints to the BME were unheard of 30 years ago."

BME activity was such that, until 1975, Saf was able to practice law part time. He discharged his duties and function for the Board from his law office.

"In 1975, Board functions were becoming so complex that I had to go one way or the other."

More Board Members, Press Attention

About 1958, the BME was authorized to conduct administrative hearings and invoke discipline. In 1963, 2 osteopathic physicians were added and the BME became a "composite licensing board" for both medical and osteopathic physicians. In 1975, the Iowa General Assembly also added 2 public members to the Board and mandated that no Board member could serve more than three 3-year terms.

"Patient complaints to the BME were unheard of 30 years ago. The BME has really seen the evidence of the change in the physician/patient relationship."

"In 1978, the legislature imposed CME requirements and rules regarding what we call the 'snitch law' — doctors reporting other doctors to the Board. The legislature granted immunity from liability and we saw stepped-up reporting by doctors, hospitals and patients," Saf relates. "The BME has really seen the evidence of the change in the physician/patient relationship."

It was about this time that the press became more interested in activities of the Board, a development with which Saf isn't entirely comfortable.

"I've been concerned over the fact that we can no longer handle discipline matters without a lot of publicity," he states.

As an example, Saf cites the time the *Des Moines Register* printed the name of 14 physicians placed on probation by the BME.

"I was worried about the effect it would have. Later, I asked one of the doctors if the publicity had hurt his practice. He said his practice was even better than before." Jokes Saf, "I asked him if he wanted the Board to put him on probation again."

"You're Not An Island"

Ron Saf has seen the BME grow from 5 members dealing almost exclusively with physician licensing to 9 members overseeing complex licensure and discipline procedures for medical doctors, osteopathic physicians and surgeons,



RONALD V. SAF

P.A.'s, E.M.T.'s and paramedics. More change is on the horizon. The 1986 legislature passed a bill placing a physician's assistant on the Board as of July 1. In addition, due to the government reorganization, the Board will now operate more extensively under the auspices of the Department of Health.

"Despite these changes, I believe the Board will still have autonomy," Saf stresses. "But, with all this increased activity, the Board will need more staff and more money."

While the incoming BME executive director (as yet unannounced) is dealing with these changes, Saf and his wife, Doris (Flo), just might be found relaxing in their cottage west of Minneapolis.

"I've had the cottage for 30 years, but there hasn't been much chance to get away," he says. "I plan to take it easy, go fishing and play golf."

Ron Saf has some parting advice for his successor.

"I've learned you're not an island unto yourself. You have to work with many professional associations and health related agencies. You have to maintain relationships with those organizations and they are quality people."

Charles Jons, M.D.

QUESTIONS AND ANSWERS



IFMC PRESIDENT REVIEWS PROGRAM

The Iowa Foundation For Medical Care — a one-time progeny of the Iowa Medical Society — has been designated as the Iowa PRO (Peer Review Organization) for the next 2 years. Here, Charles Jons, M.D., IFMC President, discusses the IMS/IFMC relationship and the IFMC's changing impact on health care delivery in Iowa.

Please review the historical ties between the Iowa Medical Society and the Iowa Foundation For Medical Care (IFMC).

Fifteen years ago, the Iowa Medical Society took a courageous and adventuresome leap into the area of peer review. The IMS perceived a mechanism of peer review which would be responsive to the needs of Iowans. It was concluded this peer review could best be accomplished through an independent organization run by physicians. The IFMC became this organization. Initially, the impact of the IFMC on the practice of medicine was relatively small and limited primarily to fee arbitration.

What developments brought about a change in the IFMC's impact on health care delivery?

In the early 1980's, the IFMC began to review for both private and governmental organizations. The Foundation then developed programs of its own and, in many cases, these programs started to impinge upon the classic practice patterns of Iowa physicians.

Two years ago, the IFMC was designated as a statewide PRO. With this designation came a federal requirement to review hospital admissions and discharges and to evaluate the quality of care being delivered. Initiation of the prospective payment system 2 years ago was a difficult transition for Iowa physicians and hospitals because it changed hospitals' reimbursement systems. Suddenly, the hospital practice of Iowa physicians was being challenged by this one-time progeny of the Iowa Medical Society. The IFMC is perceived by some as the cause of the present crisis facing rural hospitals. It's not surprising physicians have often felt betrayed by the very organization they created.

What is the current peer review climate in Iowa?

Today's consumer of medical care demands that the medical services delivered be necessary, appropriate for the illness and adequate to handle the problem. This is true whether the consumer is a private patient, an employer or a governmental organization. Most physicians will agree peer review in some form is here to stay. In its lobbying efforts for legislative tort reform, the Iowa Medical Society has strongly advocated peer review.

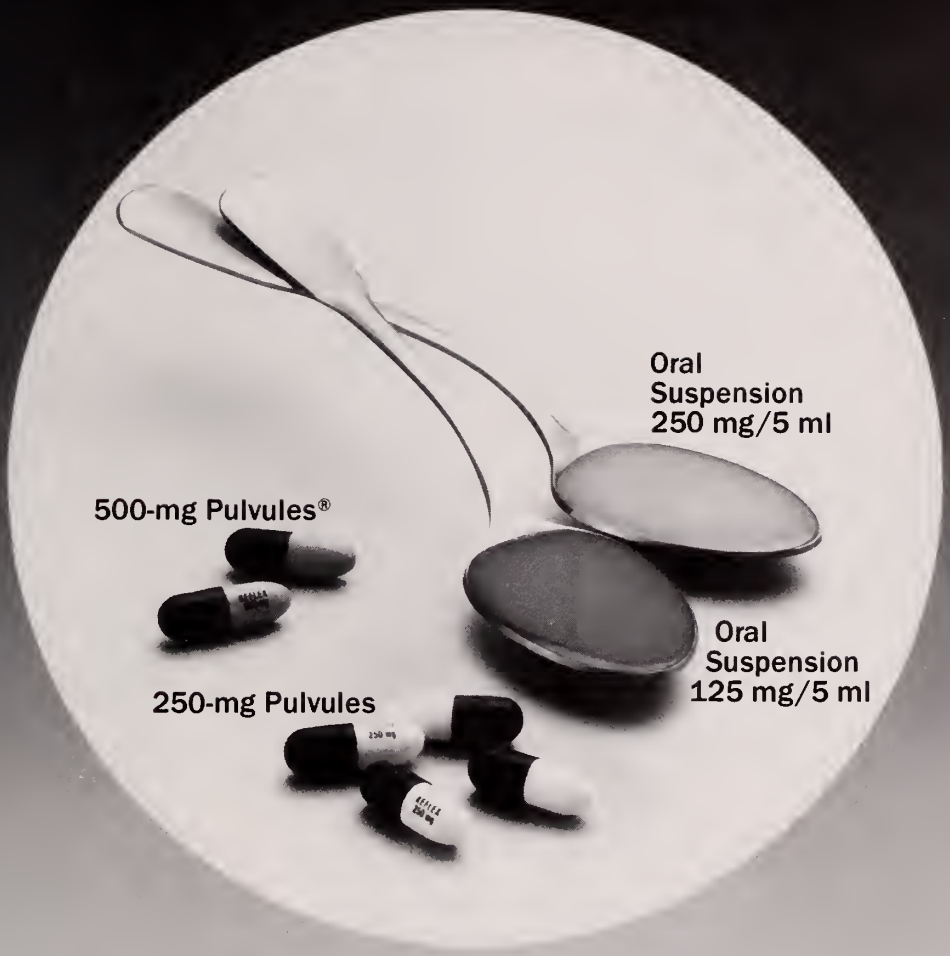
As peer review becomes more in demand, other organizations are entering the market. However, they are attempting to provide review without significant physician input and with a limited appeal mechanism. In order to meet this challenge, the IFMC must become a more efficient organization.

What improvements do you hope to attain in the IFMC's peer review process?

In the past, the IFMC has tried to do peer review utilizing competent physicians at the

(Please turn to page 321)

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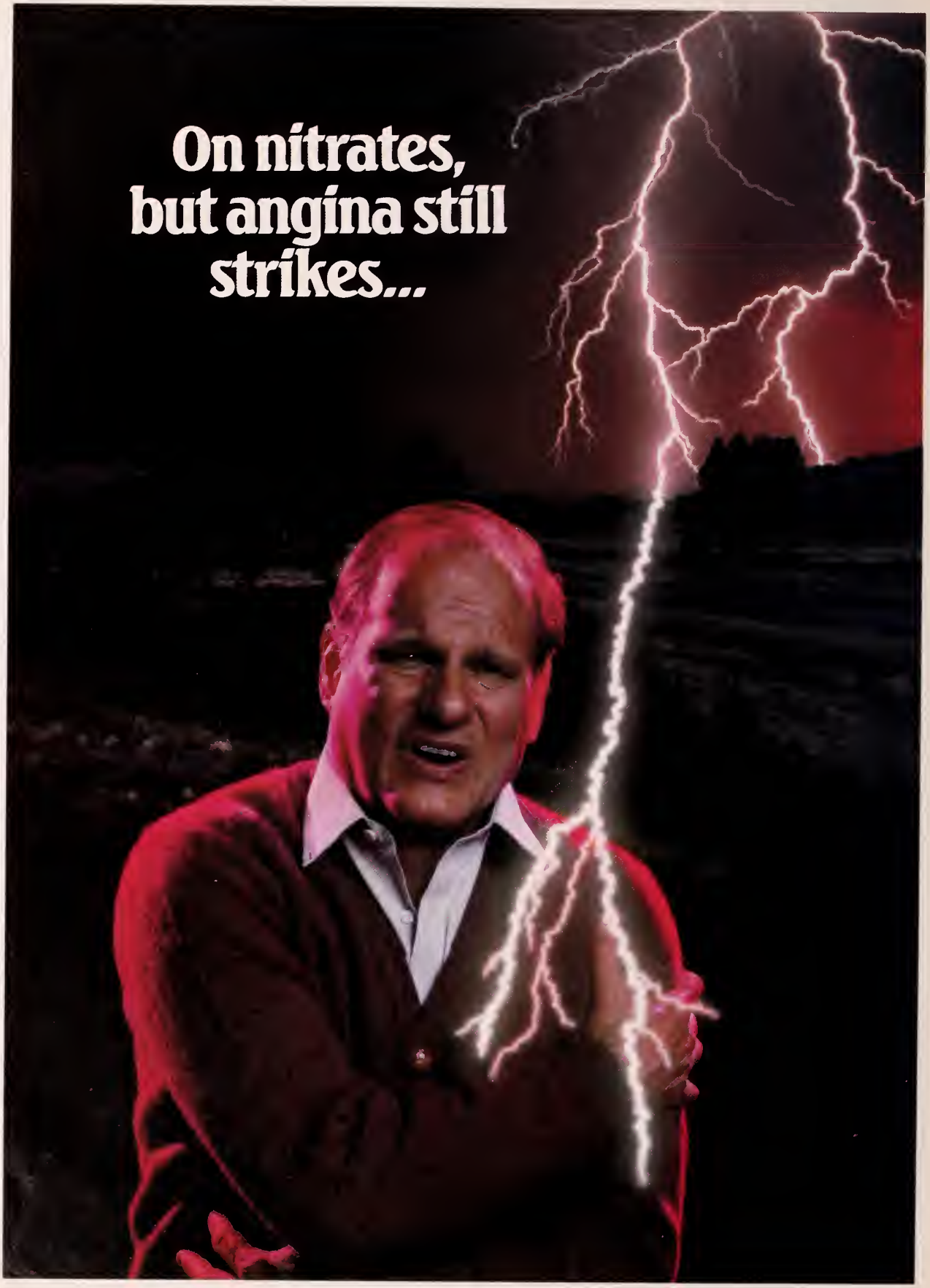
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Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result-in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C:* There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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local level whenever possible. During the next 2 years, we will try to continue this policy; but we will also try to consolidate review using physicians who have demonstrated their ability to do consistent review. Although we can't pay physicians to review each case, we will continue to require a physician be involved in the denial process and a method of appeal be available.

One of the IFMC's biggest problems has been inconsistency in the review process. Although perfect consistency is nearly impossible when multiple reviewers are used, we will try to do a better job in the future. We have developed an internal validity group to monitor our peer reviewers. We would appreciate physicians' help in substantiating any inconsistencies.

I would also like to attract more specialists to the review program. This would ensure an appropriate specialist is involved in the review process for reconsideration of previous decisions.

Another area I feel deserves additional attention is the IFMC's responsiveness to physicians and hospitals. It is frustrating for a physician to call with a concern, complaint or question and not get a timely or direct answer. We do not expect physicians to always agree with Foundation decisions, but I believe physicians deserve an explanation. I can't tell you exactly what we will do to improve this situation, but I hope the solution will be evident and implemented by this time next year.

What advice do you have for physicians in the area of peer review?

I encourage IMS member physicians to acknowledge that peer review and the IFMC will not go away, at least for another 2 years. As an old adage advises, it's better to deal with the devil you know than the devil you don't know.

I am also concerned about payment pressures placed on physicians by hospitals and insurance carriers. As a physician, I know we each have a loyalty to our own hospital; but I hope we do not forget more important loyalties, those to our patients and ourselves. Federal and state governments, as well as many employers, are counting on physicians' dedication to quality care to help them lower their costs. In these days of DRG's and budget restraints, hospitals sometimes give physicians subtle hints to discharge the money losers. The interests of the patient can get lost in the struggle. It will remain the responsibility of Iowa physicians to determine quality care is being delivered. Physicians must be willing to withstand the pressure to compromise medical care because ultimately the physician — not the hospital — will be responsible for the patient's outcome. The IFMC, as a physician organization, will continue to support physicians in this ethical conflict on patient care.

How do you view the future relationship of the IMS and the IFMC?

I hope the IFMC remains innovative enough to compete in today's marketplace, yet mature enough to accept criticism when it is justified. The IFMC has appreciated the Iowa Medical Society's help and respects the Society's opinion. I am sure we will have occasional family fights in the coming year, but I am confident we can keep the lines of communication open.

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A Case Report

Adenocarcinoma of the Small Intestine

JAMES M. CATERINE, M.D.
YECHIEL PRUSAK, M.D.
JOHN C. TAPP, M.D.
DON C. GREEN, M.D., and
DONALD C. YOUNG, M.D.
Des Moines, Iowa

Primary malignancies of the small intestine are seen infrequently. Earlier routine radiologic studies of the small intestine had diagnostic limitations. Newer techniques have improved the accuracy. This case report demonstrates the progress which has been made.

ADENOCARCINOMA of the small bowel is rare. A preoperative diagnosis is unusual. It is discovered most commonly at the time of surgical exploration.

One percent of all gastrointestinal cancers are primary in the small intestine; one-half of these are adenocarcinomas. This case report describes the combined use of endoscopic and radiographic techniques used to make a correct preoperative diagnosis.

Case Report

A 79-year-old was hospitalized with a 1-week history of recurrent vomiting, diarrhea and hematochezia. There was no indication of significant abdominal pain or weight loss.

Physical examination was noncontributory. However, laboratory studies revealed a hemoglobin of 7.0 gm% and a hematocrit of 25%.

An initial upper gastrointestinal series revealed a markedly dilated stomach with numerous granular filling defects suspected of being due to blood secondary to an erosive gastritis. Esophagogastroduodenoscopy suggested the presence of a small duodenal ulcer.

The patient was transfused and treated with cimetidine and metoclopramide. The diarrhea and rectal bleeding stopped; the hemoglobin stabilized at 11 gm%. Resumed oral feeding produced recurring vomiting.

A repeat upper gastrointestinal study and small bowel series were performed 10 days

The authors are Des Moines physicians. Dr. Caterine is a general surgeon; Dr. Prusak is a gastroenterologist; Drs. Tapp and Green are family physicians; and Dr. Young is a radiologist.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF JULY 1986

after the initial examination. Continued gastric dilation was present. Moreover, interval dilation of the entire duodenum suggested the presence of an extrinsic pressure defect involving the third portion of the duodenum. A repeat endoscopic examination was performed in an attempt to reach the distal duodenum. This was unsuccessful; however, a catheter was passed through the endoscope with barium injected. This technique identified a 4 cm annular lesion involving the proximal jejunum. Please note Figures 1 and 2.

Surgical Findings

As diagnosed preoperatively, surgery demonstrated an annular small intestinal carcinoma. There was no evidence of any regional or distant metastases. The lesion was resected with a primary anastomosis. The postoperative course was uneventful.

Surgical Pathology

The surgical specimen was 17 cm in length and included 4 cm of resected mesentery and associated lymph nodes. The lesion represented a well differentiated adenocarcinoma of the jejunum invading near the serosa; there was no evidence of nodal metastases.



Figure 1



Figure 2

Discussion

Primary malignancy of the small intestine constitutes only 1 percent of all gastrointestinal malignancies. Of these, one-half are adenocarcinoma with 90% of these found in the duodenum. It is well known that small intestinal x-ray studies may not produce a diagnosis. However, some of the newer radiological techniques have improved accuracy.

Enteroclysis involves an antegrade small bowel enema after a tube has been placed into the upper portion of the duodenum at which time barium is injected through the tube, and a series of films is obtained. Enteroclysis demonstrates fine mucosal details of the small intestine; it is a very sensitive technique in studying the small bowel.

Our technique is similar to enteroclysis. It permits evaluation of the gastric and duodenal mucosa at which time appropriate biopsies can be obtained. When endoscopy is negative, we can then inject barium through a catheter passed through the endoscope to visualize the small intestine beyond the proximal duodenum. This technique is suggested when endoscopy is negative land a lesion of the upper gastrointestinal tract is suspected. Other lesions such as early Crohn's disease and Meckel's diverticulum are also detected earlier and evaluated more completely with this technique.

Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



PARENTAL INTERFERENCE

DO THOSE of you who are over 40 or 50 remember how a baseball game was organized? The boys (and rarely a girl) would gather together on a vacant lot. The owner of the ball bat would grab the neck of the bat, then a person representing the opposing team would grasp above the hand of the first. Grasps were alternated until the last covered the end of the bat. That determined who would have first choice in the selection of members of his team. When the last selection was made — *usually the smallest kid on the block,* the game began.

No adults interfered. Rules were altered as the occasion demanded. Everyone had a good time. Occasionally an argument erupted but resolution was forthcoming. The game continued until the kid owning the bat or the ball had to go home. Sure, there were the older ones who either browbeat, but often befriended, the littlest one. All in all, the neighborhood boys got along well and enjoyed each sport in season — baseball, football (touch, not tackle), ice hockey; soccer was unknown.

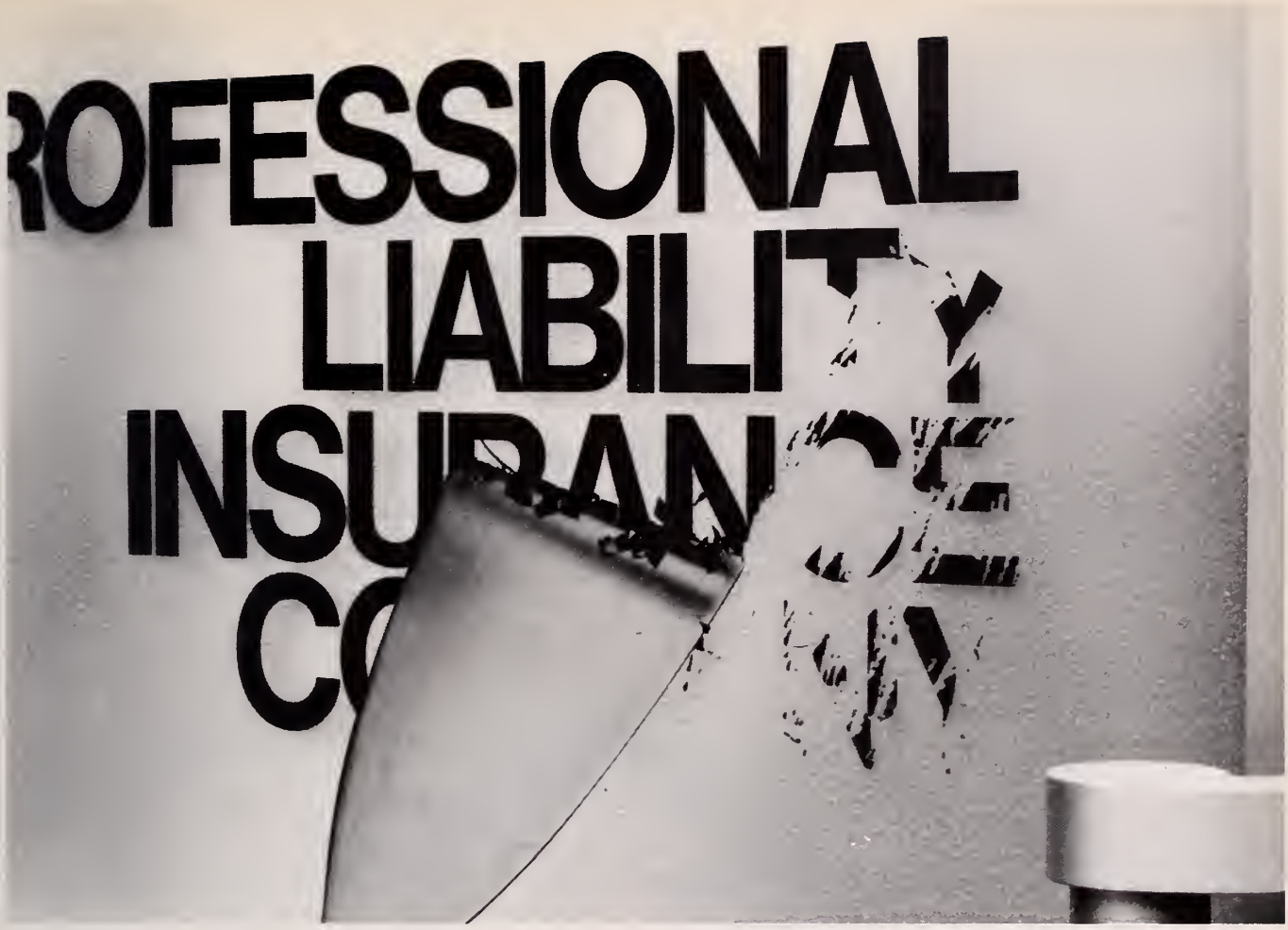
Our children were brought up in another era of sports activity. "Organized" baseball and football came into being. Eventually the organization nearly reached the proportions of professional sports. Adults took control, and often in their misguided zeal caused heartache for many youngsters. The idea of *having fun* was made secondary by a coach or team manager. He had only one purpose, to win at any price. In addition, parents became over-enthusiastic and sportsmanship suffered. There would be taunts directed toward the umpires, booing of opposing players and hard feelings developed.

A few years ago soccer became very popular. Groups of youngsters formed teams, learned the rules, and had fun. Some parents became involved, but most of them were not familiar with the new sport, and could not be critical of the manner of play. However, times change. Recently I read a news report which sounded a familiar theme. Apparently adults are becoming more familiar with soccer and are now venting their emotion in much the same way as baseball parents.

"Occasionally an argument erupted but resolution was forthcoming. The game continued until the kid owning the bat or the ball had to go home."

Apparently, baseball is declining in popularity as soccer becomes more evident. This is good because soccer is both good exercise and a good team sport. Baseball is a rather inactive game for the most part, i.e., much time spent in sitting, with one or two active at the time.

I take no stand against adults supervising the activities of youngsters. The rules of the game, like the rules of life in general, must be taught to the children. Good sportsmanship is imperative. The players, however, should be encouraged to enjoy the sports in a less strict competitive environment. Too many pseudo-professional adults can spoil the entire concept of organized sports for youngsters. Yes, that applies also to high school athletes. Safeguards must provide for safe play, there must be stimuli for fair play, and all children should be given equal opportunity to be involved. Let the children enjoy their childhood. There is time in later life for athletes to be exploited by adults for glory or money. — M.E.A.



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University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

MEDICAL MANAGEMENT OF ACUTE PEPTIC ULCER DISEASE

THE MANAGEMENT OF PEPTIC ULCER DISEASE (PUD) has changed greatly since the introduction of cimetidine, an H_2-histamine receptor antagonist, 10 years ago. Currently, 4 classes of drugs have been shown to be effective in healing and relieving the symptoms of PUD (Table 1). Some of these drugs remain investigational in the U.S.; therefore, this article will focus on those agents approved for clinical use in this country. The agents to be reviewed include ranitidine, cimetidine, and sucralfate. Antacids have been shown to accelerate the healing of duodenal ulcer when compared to placebo, but, because of the required frequency and cumbersome nature of their use, antacids should be used mainly for symptomatic relief in the management of PUD.[1, 6] Both ranitidine and sucralfate have been shown to be as effective as cimetidine and antacids in the short-term treatment of gastroduodenal ulcers.[1-4]

We review and present a rational approach to the medical management of PUD. A number of reviews have dealt with this topic.[1, 2]

H_2-Receptor Antagonists

Probably no other drug has had such an extensive evaluation as cimetidine had before its introduction for the treatment of peptic ulcer. Controlled studies demonstrated the efficacy of the drug; 4-week healing rates for gastric and duodenal ulcers are 69% and 76%, respectively.[2, 7] Most early studies employed a dose of 300 mg QID. Recent studies compared cimetidine doses of 400 mg BID and 800 mg QHS; the 4-week healing rates of duodenal ulcers with these doses were 73% and 87%, respectively. There was no significant difference in efficacy or safety. At the present time, the dosage recommended in the product labeling for cimetidine is 300 mg QID or 400 mg BID.

Adverse effects of cimetidine are rare. They include confusion, gynecomastia, impotence, breast tenderness, bone marrow depression, elevated serum creatinine, pancreatitis, hyperprolactinemia, bradycardia, interstitial nephritis, headache, and hepatocellular injury. Cimetidine may produce adverse drug interactions by binding to the cytochrome P450-dependent microsomal enzymes. Cimetidine prolongs the half-life of many drugs including theophylline, propranolol, diazepam, lidocaine, phenytoin, chlordiazepoxide, warfarin, and carbamazepine.[5] For this reason, dosages of these drugs may need to be adjusted when they are administered with cimetidine. Cimetidine has been shown to interfere with the absorption of ketoconazole, resulting in a 65% reduction in systemic availability and a fivefold decrease in peak plasma level.[4]

Ranitidine is an H_2-receptor antagonist that is chemically distinct from cimetidine, having a furan ring rather than an imidazole ring. Rantidine is 4 to 8 times more potent than cimetidine in inhibiting gastric acid secretion, but, apart from its potency, ranitidine is pharmacokinetically similar to cimetidine. Controlled trials have shown that ranitidine accelerates ulcer healing and relieves symptoms of PUD. The healing rates of gastric and duo-

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denal ulcers with a 4-week course of ranitidine are 64% and 87%, respectively. Hence, ranitidine, 150 mg BID, is better than placebo and comparable to cimetidine 300 mg QID or "intensive" antacid therapy in promoting the healing of gastroduodenal ulcers. A recent Canadian study demonstrated that ranitidine, 300 mg QHS, is as safe and effective as the standard dosage of 150 mg BID in the short-term treatment of uncomplicated gastric and duodenal ulcers.

The incidence (1-2%) of adverse reactions is close to that reported for cimetidine. Adverse reactions to ranitidine include confusion, bradycardia, tachycardia, dizziness, hepatocellular injury, hyperprolactinemia, impotence, gynecomastia, granulocytopenia, thrombocytopenia, and a rash. Ranitidine binds only weakly to cytochrome P450 (in vitro), and recommended doses of the drug do not inhibit cytochrome P450-linked liver enzymes. Despite this drug, drug interactions with ranitidine have been reported for warfarin, metoprolol, and fentanyl, and ranitidine may affect the bioavailability of some drugs by an unidentified mechanism.[8] Ranitidine *does not* affect the clearance of theophylline.[5]

Both cimetidine and ranitidine are approved for treatment of patients with gastric hypersecretory disorders (i.e., Zollinger-Ellison syndrome). Ranitidine does not cause the antiandrogen side effects seen in about half such patients treated with high doses of cimetidine.

Topical Therapy

Sucralfate is a basic aluminum salt of sulfated sucrose. It is thought to protect ulcer sites by polymerizing into a material that covers necrotic tissue. Controlled studies have shown that sucralfate is effective in the short-term treatment of ulcers, with ulcer healing rates of 61% at 4 weeks and 94% at 8 weeks.[1]

Sucralfate is minimally absorbed (2%). Its most frequent side effects are constipation, nausea, and dry mouth. It forms an insoluble salt with phosphorus and may lead to reduced phospate absorption. In patients with normal renal function, its prolonged use can lead to phosphate depletion. In patients with renal failure, tissue concentrations of aluminum may be greatly increased and this is associated with encephalopathy. Sucralfate decreases the bioavailability of phenytoin when the 2 drugs are given concomitantly; it is recommended that doses of the 2 drugs be given 2 hours apart. There is 1 report of a reduced plasma warfarin concentration when both agents were given concomitantly. Sucralfate should be taken 1 hour before meals and at bedtime. Sucralfate adheres best to ulcer craters in an acid environment; for this reason, H_2-receptor antagonists or antacids should not be given concomitantly with sucralfate. There is no evidence that the combined use of several classes of drugs achieves better results than a single drug in the treatment of peptic ulcer disease. If healing does not occur with any one drug, it is probably best to switch to another single drug.

Table 1

I.	Patent Antisecretary Agents
	H_2-antaganists (cimetidine and ranitidine)
	*Prastaglandins
	*Substituted benzimidazales (amperazane)
II.	Weak Antisecretary Agents
	Antichalinergics
	*Tricyclic antidepressants (pirenzipine, trimipramine)
III.	Caating Agents
	Sucralfate
	*Carbenaxalane
	*Callaidal bismuth
IV.	Acid Neutralizing Agents
	Antacids (Mylanta, Maalax, Amphajel . . .)

*Nat appraved far dispensing in the U.S.

Summary

Several therapeutic options are available for the acute management of peptic ulcer disease: antacids; the topical agent, sucralfate; and the H_2-receptor antagonists, cimetidine and ranitidine. These agents are of similar efficacy, safety, and cost. Therefore, considerations of compliance, adverse reactions, and drug interactions influence the choice of treatment. On these counts, the advantage generally goes to ranitidine and sucralfate. Ranitidine and sucralfate are to be preferred to cimetidine in those cases in which the patient is also taking theophylline, phenytoin, or carbamazepine, and in long-term maintenance therapy to suppress ulcer recurrence. Ranitidine and sucralfate, however, have had shorter clinical surveillance than cimetidine and antacids. Ranitidine was introduced into the U.S. mar-

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

HOMEMAKER-HOME HEALTH AIDES — AN UNTAPPED RESOURCE

MANY PHYSICIANS are aware Home Health Aides, working under the physician's plan of treatment and professional nurse supervision, provide personal care to patients in their homes. But physicians are often unaware the Home Health Aide is part of a broader service that may mean the difference between the patient being able to continue living at home and being prematurely placed in a long term care or other facility. That service is the Homemaker-Home Health Aide.

Homemaker-Home Health Aides are trained and supervised paraprofessionals who provide services in the home to individuals or families who, due to the absence, incapacity or limitations of the usual homemaker, are experiencing stress or crisis. The services they provide, in addition to the personal care mentioned, include meal preparation, housekeeping, shopping, transportation, respite care, child care, money management/ consumer education, and family management.

The following situations illustrate the difference a Homemaker-Home Health Aide can make in the patient's life.

- A 76-year-old man, recently widowed, is living in a dirty home, eating mostly cold cereals, and hasn't changed his clothes for weeks. A Homemaker-Home Health Aide is assigned to teach the man how to perform essential housekeeping, shop for and prepare nutritious meals, and operate the washer and dryer.

RESULT: A well-nourished, well-dressed and happier man in a clean home.

- A 72-year-old woman with COPD and hypertension is exhausted by the time she vacuums her living room, then takes 3 buses to reach her physician's office for monthly examinations. Fatigue and worry about missing homeward-bound buses prevents her understanding of instructions about medications, diet and exercise. A Homemaker-Home Health Aide is assigned to do some housekeeping tasks, help plan correct menus, and provide transportation to the physician's office.

RESULT: A more receptive patient who can conserve her depleting strength.

- A 17-year-old doesn't know how to properly or safely care for her new baby. The infant is not gaining properly, cries a lot, and the young mother appears to be on the verge of venting her frustration by abusing the baby. A Homemaker-Home Health Aide is assigned to work with the mother to establish a child-care routine, to teach and role-model suitable ways to handle, feed, bathe and play with the baby, and be supportive of mother's feelings.

RESULT: A less-stressed young mother, a happier, thriving baby, and one prevented case of child abuse.

- A middle-aged couple are coping with their shattered lives following the husband's debilitating stroke. The wife has assumed his total physical care in addition to her household responsibilities, but feels isolated and tied down. The Homemaker-Home Health Aide is assigned to spend one afternoon a week caring for the husband, giving the wife a planned time to get out of the house without worrying what might happen if she leaves her husband alone.

RESULT: A welcome change in routine for both husband and wife, giving something and someone new for each.

This information on public health matters is furnished and sponsored by the Iowa State Department of Health.

• A young mother is experiencing a problem pregnancy and needs to stay off her feet but she has no nearby family or close friends to care for her 2 active and demanding pre-school children. A Homemaker-Home Health Aide is assigned to visit 3 or 4 hours a day to supervise the children, prepare lunch, and have supper started when the husband arrives home to take over responsibilities. While in the home, the Homemaker-Home Health Aide also keeps the house tidied and does the laundry.

RESULT: A successful pregnancy, a relieved mother, contented children, and a less-harried husband.

These are only 5 of the limitless ways in which Homemaker-Home Health Aides can make a difference.

The people of Iowa are fortunate to have Homemaker-Home Health Aide service in all parts of the state. In every Iowa county, there is at least 1 agency which provides Homemaker-Home Health Aide service to residents who need it; their charge is based on the individual's ability to pay (sliding fee scale), with the remainder of the cost paid from a state appropriation allocated to the county by the Iowa Department of Public Health. These agencies must meet a number of high standards in order to receive the State funds; most notably the standards require specific pre-assignment and ongoing training for the Homemaker-Home Health Aides, frequent on-site supervision of the Homemaker-Home Health Aides on the job, and close accountability in terms of fiscal and client records.

These State funds are awarded each county by the Board of Supervisors, following a planning process involving the Board of Health, Board of Social Welfare, County Department of Human Services, Area Agency on Aging, and local in-home health care providers. Services provided with the State funds, as well as agency operation, are monitored by a staff of 4 Department of Public Health Field Consultants. Each agency is visited by a Field Consultant at least 3 times a year, when agency policies, client and personnel records, and fiscal records are reviewed for compliance with the standards and other parts of the Iowa Administrative Code.

The frequency and length of Homemaker-Home Health Aide visits, as well as the tasks

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STATE DEPARTMENT OF PUBLIC HEALTH

(Continued from page 329)

to be accomplished, are determined by the agency's Case Manager (who is often a nurse, a social worker, or a home economist). The Homemaker-Home Health Aide is assigned only after a thorough assessment of the patient's needs and abilities and a care plan have been completed by the Case Manager. Service may be provided as frequently as once or more a day or as infrequently as every 2 weeks. Many agencies are staffed to give service on evenings and weekends; others may not be.

If you have patients whom you feel might benefit from these services, your local Homemaker-Home Health Aide agency would be pleased to receive a referral. The local Board of Supervisors can give you the name of the State-funded agency, or contact the local Public Health Nursing Service or the Iowa Department of Public Health at 515/281-3104.

DRUG THERAPY REVIEW

(Continued from page 327)

ket only in 1983. According to manufacturers' claims, ranitidine has been used in Europe in over 8 million patients during a 5-year period, suggesting an acceptable postmarketing surveillance. Significant adverse drug effects may become apparent, however, only after widespread use for several more years. — PETER J. KARRAS, M.D., *Resident in Internal Medicine and* KONRAD S. SCHULZE, M.D., *Staff Physician, Division of Gastroenterology-Hepatology.*

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May 1986 Morbidity Report

Disease	May 1986 Total	1986 to Date	1985 to Date	Most May Cases Reported From These Counties
Aids	1	9	3	NA
Amebiasis	5	19	26	Scattered
Brucellosis	0	1	0	—
Chickenpox	1467	6390	5144	Scottered
Compylobocter	44	100	70	Scottered
Cytomegolovirus	2	11	3	Block Howk, Johnson
Eotons Agent Infection	0	4	6	—
Encepholitis, virol	1	4	10	Woyne
Erythemo Infectiosum	0	218	0	—
Gostroenteritis (GIV)	1636	11279	9801	Scottered
Giordiosis	27	134	128	Scottered
Hepotitis, A	11	24	20	Scottered
Hepatitis, B	11	41	40	Scottered
Hepotitis, Non A-B	4	11	8	Scottered
Hepotitis type unspecified	0	0	4	—
Herpes Simplex	131	519	448	Scottered
Herpes Zoster	0	0	0	—
Histoplosmosis	2	11	6	Block Howk, Clinton
Infectious mononucleosis	34	146	96	Scottered
Influenzo, lob confirmed	6	247	169	Scottered
Influenzo-like illness (URI)	4310	70571	24605	Scottered
Legionellosis	1	5	3	Dubuque
Molorio	0	1	1	—
Meningitis oseptic	4	11	11	Dubuque, Humboldt Johnson, Polk
bocteriol	6	39	61	Scottered
meningococcal	3	9	7	Dubuque, Polk
Mumps	3	7	7	Black Howk, Worren, Winneshiek
Pertussis	4	9	3	Scottered
Rabies in animols	23	77	81	Scottered
Reye Syndrome	0	0	4	—
Rheumatic Fever	1	6	0	Polk
Rubella (Germon meosles)	0	0	0	—
Meosles	17	18	0	Monono
Solmonellosis	13	53	83	Scottered
Shigellosis	1	4	8	Linn
Toxic Shock Syndrome	0	4	5	—
Tuberculosis				
totol ill	8	22	34	Scottered
boct. pos.	6	19	32	Scottered
Typhoid Fever	0	1	0	—
Venereal diseoses:				
Gonorrheo	376	1542	1755	Scottered
Chlomydio	281	1001	15	Scottered
Syphilis	0	5	14	—

Other Non-Reportable Diseoses: Trichinosis — 1, Scott; Ureoplosmo Urealyticum — 1, Cedar 1, Cerro Gordo 1, Dubuque 8, Johnson ond 1, Scott.

Recent Highlights

U. OF I. COLLEGE OF MEDICINE

CANCER RESEARCH EMPHASIS SHOULD SWITCH FROM TREATMENT TO PREVENTION, report University of Iowa and Harvard University researchers. Using what they consider to be the single most reliable statistical measure, the researchers found that for the years 1950-82 the age-adjusted cancer mortality rates showed a slow and steady increase. **Elaine Smith,** Preventive Medicine and Environmental Health, reported that a shift in emphasis "from research on treatment to research on prevention" may be needed to lower the mortality rates. "These comments about lack of progress are in no way an argument against the earliest possible diagnosis and the best possible treatment of cancer." Cancer mortality for 1950-82 showed a moderate increase for all race-sex groups combined. "It is time for an open debate to take stock of past achievements and to consider what levels of funds should be invested in what kinds of future efforts," the researchers reported.

THE EFFECTS OF LOCAL AND GENERAL ANESTHESIA *on patients' behavior following surgery are being compared in a University of Iowa College of Medicine study. A $150,000 grant from the Robert Wood Johnson Foundation has been awarded for the study to* ***Mohamed Ghoneim,*** *Anesthesia. Ghoneim is studying the behavior, including psychological and cognitive functions, of patients before and after undergoing one of three surgical operations: hysterectomy, hip or knee joint replacement or removal of the prostate. The UI study results might be useful in guiding physicians' selection of the appropriate method of anesthesia when a choice is possible. The results also may direct early rehabilitative efforts to patients at risk of developing behavior complications.*

AT-A-GLANCE . . . Reynold Spector, Internal Medicine and Pharmacology, is the new director of the college's Clinical Research Center . . . **Louis Vaughn Kirchhoff,** Internal Medicine, was named one of two 1986 Syntex Scholars. Kirchhoff will receive a Syntex Scholar Award of $150,000 to study Chagas' disease, a major cause of heart disease in Latin America. An estimated 10-12 million people are infected with the parasite that causes heart disease. The grant will help Kirchhoff work toward developing a vaccine to prevent Chagas' disease. . . . **Gary L. Soderberg,** Physical Therapy, was appointed director of the UI Physical Therapy Education program in March. . . . **Joel Weinstock,** Internal Medicine, has been appointed director of the UI Internal Medicine Division of Gastroenterology-Hepatology. . . . the 11th annual UI College of Medicine Research Day provided faculty, staff members, students and members of the general public with information on 143 health research projects at the college. Projects on display in May ranged from a preliminary report on an aneurysm study to a study of the insurability of children with congenital heart disease.

MORE RURAL ELDERLY IOWANS IN A UI STUDY *are still working and are still able to bathe, dress and eat without assistance than their counterparts in similar groups in urban Connecticut and Massachusetts. Those are some of the preliminary findings from the 65-Plus Rural Health Study being conducted by the UI College of Medicine Center for Health Services Research. The 4-year-old study is conducted by* ***Robert Wallace,*** *Preventive Medicine and Environmental Health. The UI study is a sister project to similar ones by Harvard, Yale and Duke universities that aim to determine the causes, prevention and treatment of diseases and disability in the elderly.*

This report has been compiled by The University of Iowa Health News Service.

One Number

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FREE BOOKLET — A new report on osteoporosis published by the American Council on Science and Health (ACSH) is available by sending a self-addressed stamped (39¢ postage) business-size (10) envelope to Osteoporosis Report, ACSH, 47 Maple Street, Summit, New Jersey 07901.

SPELLING OF ANTICONVULSANT REVISED — Roche Laboratories announced recently that the spelling of their anticonvulsant medication Clonopin will henceforth be Klonopin. This is to avoid confusion with the generic name clonidine, an antihypertensive product.

FREE PAMPHLET — Pfizer Laboratories recently announced the publication of "Learning to Live with Hypertension," a patient information publication (PIP) available to physicians and other health care providers for free distribution to patients. This public service by Pfizer continues a series of such publications (previous publications include information about angina, osteoarthritis, and diabetes). Requests for free copies should be sent to PIP, P. O. Box 3852X, Grand Central Station, New York, New York 10163.

AIDS REPORT — "Answers About AIDS" is a new consumer information report published by the American Council on Science and Health. To receive a copy of this booklet send a self-addressed, stamped (39¢ postage), business size (#10) envelope to AIDS Report, ACSH, 47 Maple Street, Summit, New Jersey 07901.

RECENT BOOKS

Tilton, Nan and Todd and Moore, Gaylen, 1985, *Making Miracles: In Vitro Fertilization*, Doubleday and Co., New York, N.Y. $16.95. The story related by the parents of the first pair of twins produced by in vitro fertilization. A personal story is presented with a background of an adequate discussion of this interesting method of conception.

Rothbart, Betty, editor, 1985, *Frontiers in Fertility, Planned Parenthood Federation of America*, New York, N.Y., $8.95. This is a report on a symposium on human fertility regulation, technological frontiers and their implications. Discussion includes alternatives in conception, prenatal responsibilities, late abortion and seriously ill neonates.

Pitzele, Sefra Kobrin, 1985, *We Are Not Alone — Learning to Live with Chronic Illness*, Thompson and Co. Inc., Minneapolis, Minnesota, $14.95. The patient with a chronic illness will find much satisfaction with this practical discussion of many of their concerns. The author, a victim of lupus, writes from personal experience as well as a devotion to the concerns of others with chronic illness.

Garber, Edward P., editor, 1985, *Genetic Perspectives in Biology and Medicine*, University of Chicago Press, Chicago, Illinois, cloth, $30, paper, $12.00. This is a collection of essays from Perspectives in Biology and Medicine which since 1957 has communicated new ideas in biological and medical sciences. This is an interesting and informative work enhanced by the editor's comments.

(Please turn to page 334)

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RECENT BOOKS

(Continued from page 333)

Altman, Dennis, 1985, *AIDS: In the Mind of America,* Doubleday and Co. Inc., New York, N.Y. $16.95. The author, a political scientist, has written several books on homosexuality. He now explores the social, political and psychological impact of a new epidemic. It is obvious the author injects much personal feeling into his research on this subject.

Bennett, Cleaves M. and Cameron, Charles, 1986, *Control Your High Blood Pressure Without Drugs,* Doubleday & Co., Inc., Garden City, New York, Paperback, $9.95. Discussion of 12-week program on self-management of diet, exercise, and stress to assist in the control of hypertension. Patients will procure and read this book; physicians should be aware of its content.

Spinks, Sarah, 1986, *Cardiac Arrest,* Doubleday & Co., Inc., Garden City, New York, $17.95. The story of 33 babies who died while in the cardiac ward of the Hospital for Sick Children in Toronto. Was it murder?

American Society of Hospital Pharmacists, 1986, *The New Consumer Drug Digest,* Revised Edition, Facts on File, Inc., New York, New York, $10.95. For the consumer, an authoritative, easily understood guide to common non-prescription and prescription drugs.

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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. John C. Justin, Mason City, and **Dr. James Hendrix,** Burlington, are the recipients of the American Academy of Pediatrics Review and Education Program Fellowship Award. The award was established to recognize members of the Academy who have actively participated in the program for 6 consecutive years. . . . **Dr. John Deck** has joined **Dr. George F. Fieselmann** in Spencer. Dr. Deck received the M.D. degree at the University of Nebraska and served his family practice residency in Lincoln, Nebraska. . . **Dr. Dale G. Phelps** has been named president of Black Hawk County Medical Society. Other officers elected are — **Dr. Donald W. Schmit,** president-elect; **Dr. Robert L. Friedman,** secretary; and **Dr. Robert L. Savereide,** treasurer. Drs. Phelps, Schmit and Friedman are Waterloo physicians. Dr. Savereide practices in Cedar Falls.

Dr. Steven Rosebrock has joined the medical staff at the Burlington Medical Center. Dr. Rosebrock received the M.D. degree at Northwestern University; interned and completed his family practice residency at the University of Nebraska.

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Dr. David R. Ahrens was reelected chief of staff at the Guthrie County Hospital. **Dr. Herbert Neff** was elected vice president and **Dr. Donald W. Todd,** secretary. All are Guthrie Center physicians.

DEATHS

Dr. Robert S. Bell, 72, Burlington, died March 16 at Burlington Medical Center. Dr. Bell received the M.D. degree at the U. of I. College of Medicine; interned at St. Mary Hospital in Madison, Wisconsin; and served his radiology residency at the U. of I. He began medical practice in Burlington in 1948, retiring in 1983. Dr. Bell was a past president of the Des Moines County Medical Society; past president of the Iowa Radiologic Society; member of the Rocky Mountain Radiology Society and member of the American College of Radiology.

Dr. Harold Henstorf, 67, former Shenandoah physician, died February 25 at his home in Columbia, Missouri. Dr. Henstorf received the M.D. degree at the U. of I. College of Medicine. He began medical practice in Shenandoah in 1946 following World War II military service. In 1970, he moved to Columbia, Missouri, where he served a radiology residency and later served as chief of diagnostic radiology at the University of Missouri at Columbia, retiring in 1983. Dr. Henstorf was a member of the Radiological Society of America and in 1967 was named "Citizen of the Year," by the Shenandoah Lions Club.

Dr. Curtis W. Johnson, 43, Clinton, died March 29 at University Hospitals in Iowa City. Dr. Johnson received the M.D. degree at the University of Illinois Medical School in Chicago; interned and completed his ophthalmology residency at the University of Tennessee Hospital in Memphis. He joined the Bluff Medical Center in Clinton in 1974. Dr. Johnson was a member of the American Academy of Ophthalmology and the Iowa Academy of Ophthalmology and past president of

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the medical staff at Jane Lamb Health Center in Clinton and the Clinton County Medical Society.

Dr. Khosrow S. Kaboli, 55, Donnellson, died April 16 at his home. Dr. Kaboli received his medical education in Iran and began medical practice in Donnellson in 1966. He was a member of the American Association of Obstetricians and Gynecologists.

Dr. Maurice W. Van Allen, 68, professor and head of the Department of Neurology, U. of I. College of Medicine, died May 2 at his home in Iowa City. Dr. Van Allen received the M.D. degree at the U. of I. College of Medicine; interned at Pennsylvania Hospital in Philadelphia and served his neurosurgery residency at the U. of I. He was a fellow of the American Academy of Neurology; past president of the Mid-West Neurosurgical Society; and member of Society for Experimental Biology and Medicine, American Neurological Association, Harvey Cushing Society and Central Society for Neurological Research.

Dr. Edick Hartunian, 64, Cedar Rapids, died April 1 at St. Lukes Hospital in Cedar Rapids. Dr. Hartunian received the M.D. degree at the University of Nebraska School of Medicine and served his residency in psychiatry at the U. of I. College of Medicine. Prior to locating in Cedar Rapids, he practiced psychiatry at the Mental Health Institute in Mount Pleasant. Dr. Hartunian was a member of the American Psychiatric Association and Iowa Psychiatric Society.

Dr. Verne L. Schlaser, 75, Cape Fair, Missouri, longtime Des Moines physician, died May 23 at Table Rock Health Care Center in Table Rock, Missouri. Dr. Schlaser received the M.D. degree at the U. of I. College of Medicine. He began medical practice in Des Moines in 1938. Dr. Schlaser was a past president and charter member of the Iowa Academy of Family Practice and past president of the Iowa Medical Society. He was a 1986 recipient of the Jefferson Award for outstanding community service, one of 15 finalists selected nationwide.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Like Crime, This Program Doesn't Discriminate

Across Iowa, there are crime victims who aren't being helped by the Iowa Crime Victim Reparation Program. Why? Because not enough members of the public and key professional groups know the program exists.

Marda Howard, coordinator of the Iowa Crime Victim Reparation Program, wants to heighten public awareness of what the program is, how it works and who it helps. Iowa physicians are among those professional groups she would most like to educate.

"Because physicians are often the first to see a victim after a crime occurs, they can play a vital role in telling victims about the program," Howard says.

The Iowa Crime Victim Reparation Program was created by an act of the Iowa General Assembly and began operation January 1, 1983. The program is funded through a $100 civil penalty assessed individuals arrested for drunk driving.

The program's purpose is to compensate innocent victims for out-of-pocket expenses they incur from violent crimes such as murder, attempted murder, rape, assault and child and domestic abuse. Victims of drunk drivers also qualify for the program. Major reimbursable expenses include: medical expenses up to $10,000 (not covered by any other collateral resource), lost income and loss of support, clothing kept by law enforcement officers as crime evidence and funeral and burial expenses.

There are 4 criteria for eligibility in the program: (1) The victim must report the crime to law enforcement within 24 hours of the crime; (2) The application for reimbursement must be filed with the Department of Public Safety within 180 days after the crime; (3) the victim must cooperate with law enforcement in investigation and prosecution of the crime; and (4) the victim must cooperate with the Department of Public Safety in processing the application for reimbursement.

"We are probably only receiving claims from one to 10 victims who could expect to recover expenses. We are anxious to get the word to the people who have early contact with victims and have some idea of whether the victim may be eligible for reparation," Howard says.

In most cases, the Department of Human Services is required to file a claim for victim reparation. The physician is asked only to work with Howard on completion of necessary paperwork. However, if the victim is under age 18, the physician is expected to file for reparation and report the crime to the Department of Human Services.

The Iowa Medical Society is currently represented on the Ad Hoc Advisory Committee on Crime Victim Reparation. With the assistance of this Committee, Howard has begun work on a public education campaign designed to increase awareness of the program.

"The program isn't a welfare program designed only for lower income people. It's for innocent victims of violent crimes in all walks of life. Even a nonresident victimized in Iowa is eligible, as long as the basic requirements are met."

For more information about the program or to receive an application for reparation, contact the Crime Victim Reparation Program, Iowa Department of Public Safety, Wallace Building, Des Moines, Iowa, 50319; or call (515) 281-5044.

July 1986

Iowa Medicine

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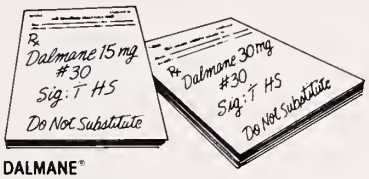
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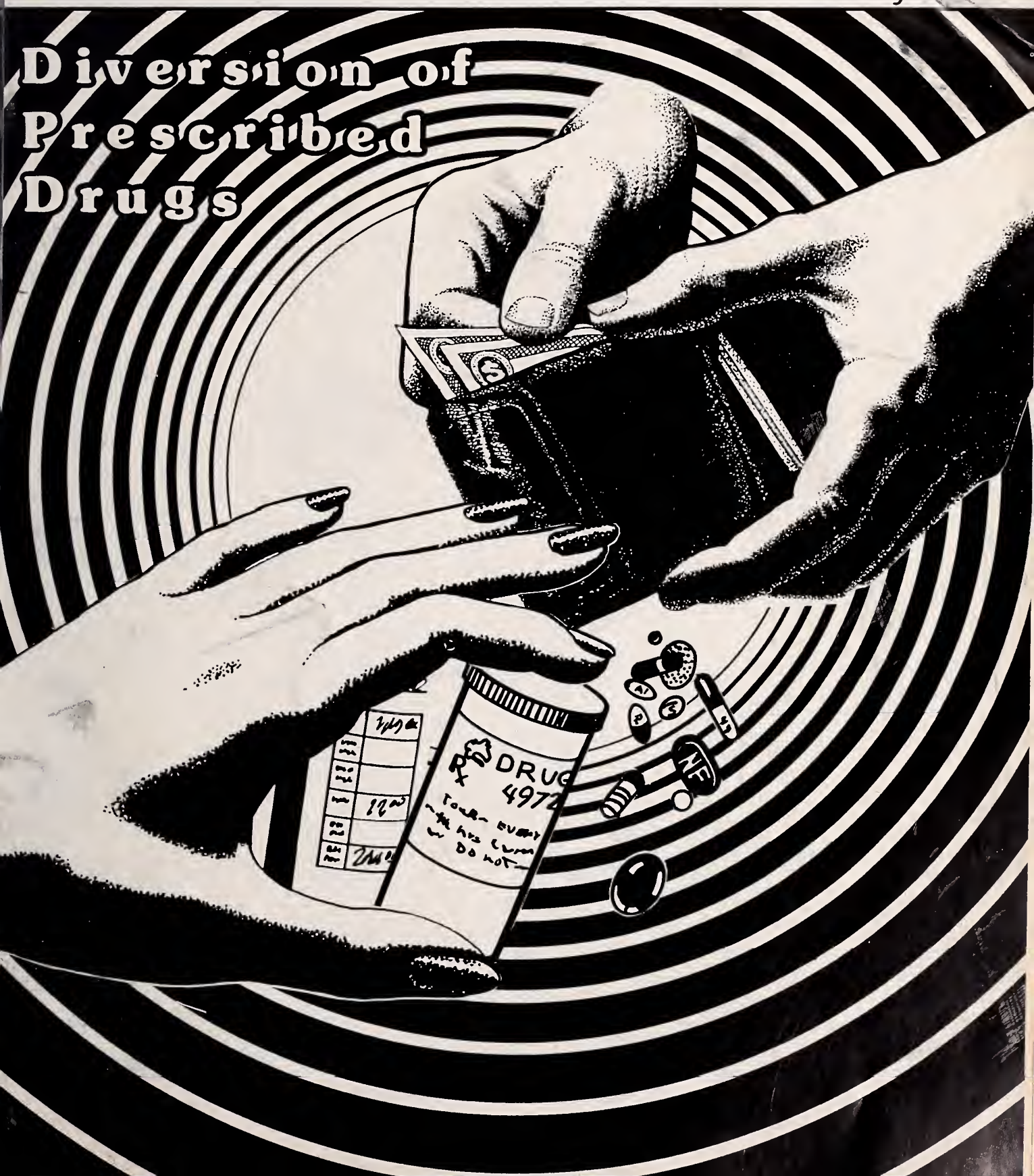
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IowaMedicine

August 1986

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Diversion of Prescribed Drugs

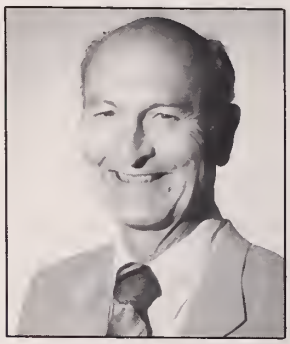


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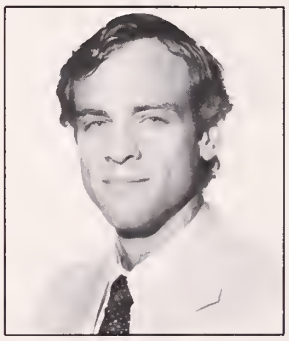


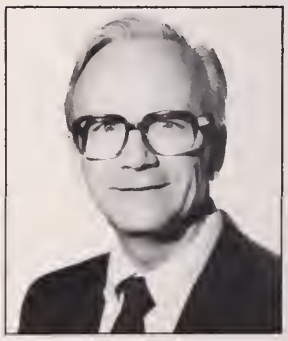


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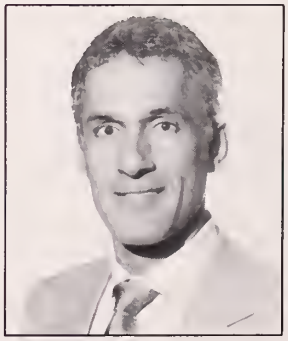
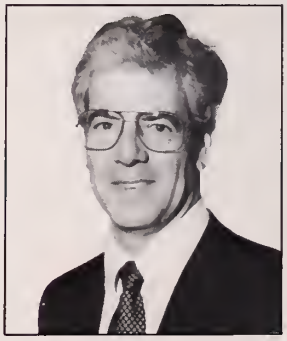




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ABOUT THE COVER



ABOUT THE COVER — In late 1984, the Iowa Medical Society and other health care organizations decided to investigate the extent of Iowa's prescription diversion problem. With assistance from the AMA and Governor Terry Branstad's office, the Prescription Abuse Data Synthesis project was launched. This month's IOWA MEDICINE focuses on what the project revealed about Iowa's prescription diversion problem and what physicians can do to help prevent it.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-B709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: $15 per year. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

NATIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 South Blvd., Oak Park, Ill. 60302. Phone 312/3B3-BB00

IOWA ADVERTISING: Contact Mrs. Polly Lynch, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265. Phone 515/223-1401

EDITORIAL CONTENT: The work of various authors is found in the diversified content of IOWA MEDICINE. The Society respects these individual efforts but is unable to assume responsibility for the accuracy of that which is submitted. Manuscripts and editorial inquiries should be directed to Editor, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265

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MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS

UPDATE ON SLEEP DISORDERS

SEPTEMBER 17, 1986

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PRESIDENT'S PRIVILEGE



WE CARE — LET'S SHOW IT

At the IMS Scientific Session in April, we heard attorneys on both sides of the malpractice controversy make some frank statements about physicians' communication skills. We are "notoriously poor communicators," stated one. Verbally, doctors are "their own worst enemies," said another.

These are provocative assertions — assertions that may have made physicians in the audience feel uncomfortable and a little defensive. Some of us may have been left wondering, if we project this same image to our patients.

I believe the vast majority of Iowa physicians care deeply about their patients. However, I also believe this caring doesn't always come across to those patients.

The healthiest physician-patient relationship is an open one. Your patients should know they can ask questions and you will gladly answer. They should know you care and they can rely on you in difficult circumstances.

Building such rapport is not as hard as you may think. It's a matter of taking a little extra time. Inquire not only about your patients' health but about their lives. When you explain a procedure, diagnosis or plan of treatment, do so in a way that encourages questions. Don't shy away from the sometimes painful responsibility of explaining a bad result. This is the time the patient and the patient's family need you most.

We care about our patients, so let's try to show it. It's a big step toward effective communication.

L. D. Caraway, M.D.

L. Dean Caraway, M.D.
President

PADS: A Study of Prescription Drug Diversion in Iowa

Does Iowa have a serious problem with illegal diversion of prescription drugs? Are health care professionals and state regulatory agencies dealing effectively with it? These are the questions that Prescription Abuse Data Synthesis project sought to answer. Begun in late 1984, the PADS project involved health care professionals such as the Iowa Medical Society and state regulatory and law enforcement agencies. This story explores how PADS worked and what was learned about prescription drug diversion in Iowa.

NATIONAL STATISTICS on prescription drug diversion need no embellishment to point up the seriousness of this problem. The figures speak for themselves.

- **Roughly 60% of all drug-related emergency room visits involve prescription drugs.**
- **About 70% of all drug-related deaths involve prescription drugs.**
- **80-90% of all prescription drug diversion occurs at the hospital, pharmacy or prescriber level.**

While prescription drug diversion for illegal purposes is not a pandemic problem in Iowa, neither are we immune from it. In late 1984, Iowa's health care professionals and state regulatory and law enforcement agencies decided to find out if our resources for combating drug diversion are being utilized effectively and efficiently.

Thus, Iowa's Prescription Abuse Data Synthesis (PADS) project was born. This June, Iowa became the twenty-first state to seek solutions to the prescription drug diversion problem through completion of PADS.

Identifying The Problem

Spearheaded by the Iowa Medical Society and sponsored by Governor Terry Branstad, Iowa's PADS project was carried out with financial and technical assistance from the American Medical Association. Participants in the project included state agencies and professional associations involved in providing and regulating Iowans' health care.

The PADS model being used nationwide is designed to identify the nature and scope of prescription drug diversion and develop a public-private partnership to support effective countermeasures. The process assumes there are pre-existing programs geared to attack the problem.

Therefore, the focus of Iowa's PADS project was on identifying the scope of the problem

and the strengths and weaknesses of the programs created to deal with it. The next step? Eliminating the vulnerable spots in our defense against prescription drug diversion and capitalizing on the strengths.

The PADS Process

The Prescription Abuse Data Synthesis project was no small undertaking. It involved examination of an extensive array of policies, procedures and resources involved in Iowa's diversion control efforts, as well as targeting specific individuals and institutions for investigation. Under the PADS model, this wide scope of activity was coordinated by 3 working groups: the PADS Policy Group, Technical Group and Regulatory Group.

(1) **POLICY GROUP** was composed of a representative from each agency and organization involved in the project. Its purpose was to provide overall guidance and make final PADS recommendations.

(2) **TECHNICAL GROUP,** a subgroup of the Policy Group, was charged with developing better information on drug diversion in Iowa. This group collected data from a number of sources and identified hospitals, pharmacists and physicians for investigation. Membership of the technical group included representatives of the various organizations supplying this data.

(3) **REGULATORY GROUP,** also a subgroup of the Policy Group, coordinated analysis and followup investigation based on information developed by the Technical Group. Because of the confidential nature of these activities, this group was comprised of representatives of state agencies allowed by Iowa law to review such matters.

Gathering The Data

The Technical Group tapped several key sources of data on drug diversion. Analysis of this data pinpointed potential problem areas — for example, an abnormally high incidence of use of a specific drug in a specific part of the state. Such information was turned over to the Regulatory Group for followup investigation.

To compile information on the supply and demand for diverted prescription drugs in Iowa, the Technical Group used several key data sources:

- **ARCOS** (Automation of Reports and Consolidated Orders System) — A federal system designed to provide accountability for controlled substances at each link in the distribution chain. ARCOS provided data on the amount of specific drugs shipped into specific parts of Iowa.

- **REGULATORY BOARD DATA** — Licensing boards for physicians, nurses, pharmacists, dentists and veterinarians provided data on types of drugs encountered in board actions involving licensees.

PADS PARTICIPANTS

The following organizations were participants in the Prescription Abuse Data Synthesis Project completed this June:

Attorney General
Board of Dental Examiners
Board of Medical Examiners
Board of Pharmacy Examiners
Board of Veterinary Examiners
Iowa Department of Human Services
Governor's Office
Iowa Board of Nursing
Iowa Dental Association
Iowa Department of Public Safety
Iowa Department of Substance Abuse
Iowa Hospital Association
Iowa Medical Society
Iowa Pharmacists Association
Iowa Police Chiefs and Peace Officers
Iowa Nurses Association
Iowa Podiatry Association
Iowa Veterinary Medical Association
U.S. Drug Enforcement Administration

• **MMIS** (Medicaid Management Information System) — This system provides data on drugs purchased through the state Medicaid system as well as information on high-volume prescribers, dispensers and recipients.

• **DEPARTMENT OF PUBLIC SAFETY** — Provided data on the types of drugs seized on the streets and analyzed in the state criminalistics laboratory.

Other sources used by the PADS group included drug treatment data and reports from thefts, burglaries, forgeries and scam operations.

HOW DOES IT HAPPEN?

Diversion of prescription drugs for illegal purposes occurs in a number of ways. However, according to the report of the Prescription Abuse Data Synthesis Project, most diversion involves health professionals who fall into one of the so-called "4D" categories:

- *DISHONEST or "script" doctors who willfully and knowingly prescribe or dispense drugs for purposes of abuse (usually for profit), and pharmacists who willfully and knowingly dispense controlled drugs without a prescription.*
- *DISABLED or impaired health professionals whose competence has been impaired by personal drug or alcohol abuse, or other psychological disorders.*
- *DECEIVED practitioners who unwittingly contribute to the problem by acquiescing to some patients' ruses or insistent demands for drugs.*
- *DATED professionals who have not kept pace with developments in pharmacology, drug therapy or drug abuse.*

What Was Learned?

Based on data gathered by the PADS Technical Group, the Regulatory Group identified 7 drugs as targets for further analysis:

1) **Powdered opium** — Iowa ranked first in the nation on per capita consumption, with 41% of the drug distributed in areas containing under 15% of the population. An investigation focused on 10 registrants (hospitals, pharmacists or physicians) with excessive purchases. A check showed the drug was being prescribed for elderly patients with terminal cancer.

2) **Methylphenidate** — Iowa ranked 5th in the nation in per capita consumption. Data showed 10 pharmacies and 3 hospitals, most in the same zip zone, with abnormally high usage. Psychiatric and pediatric groups were the heaviest prescribers in this zip zone, with hyperkinesis accounting for the majority of usage.

3) **Amobarbital** — Iowa ranked 6th in the nation in per capita consumption, with 5 pharmacies and one hospital accounting for most purchases. Audits of the pharmacies showed usage involved a relatively small number of patients. One practitioner used Amobarbital as a mild tranquilizer on elderly patients. Usage of the drug is now limited to emergency situations.

4) **Alphaprodine** — Iowa ranked 10th in the nation in per capita consumption, with over 53% of the distribution occurring through 4 hospitals or clinics. Investigations of the institutions showed 96% of the drug was purchased for use in the labor and delivery rooms.

5) **Cocaine** — Iowa ranked 19th in per capita consumption of prescription cocaine. Investigations showed a large Iowa hospital accounts for major purchases and use of cocaine, with the greatest use in the otolaryngology department.

6) **Amphetamine** — Iowa ranked 22nd in per capita consumption, with over 40% of the drug distributed in an area containing 4% of the state's population. A Board of Medical Examiners' (BME) investigation of a practitioner accounting for 31.5% of the distribution resulted in no action.

7) **Methaqualone** — Iowa ranked 27th in per capita consumption, with 57.7% of the usage occurring in 4 zip zones. The PADS Regulatory

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Group concluded a scam may have been operating in one of these zones. In other zones, several prescribing physicians appeared to be "dated" and another has lost his license to practice due to a felony related to delivery of a controlled substance.

Methaqualone has now been reclassified to Schedule 1 of the Controlled Substance Act. It is no longer legal to prescribe or dispense this drug.

Investigation Backlog

The PADS Technical Group also compiled data on recently concluded board actions relating to drug problems. The group learned that all the boards have large backlogs of unfinished investigations; however, a number of investigations have been concluded:

- **Board of Pharmacy Examiners** — From 1982-1985, this board imposed 51 disciplinary sanctions due to drug problems. Four drug hearings were pending as of December 31, 1985.
- **Board of Nursing** — From 1982-1985, this board took 39 actions concerning drugs. Eleven open drug investigations were pending on December 31, 1985.
- **Board of Dental Examiners** — Ten disciplinary actions related to drugs were completed from 1982-1985. One drug related investigation remained open on December 31, 1985.
- **Board of Medical Examiners** — There were 150 disciplinary sanctions imposed from 1982-1985 concerning drugs. This board had 25 open drug related investigations on December 31, 1985.

Improving The System: PADS Recommendations

In its final report, the PADS Policy Group concludes Iowa's system for dealing with prescription drug diversion is basically effective but can be improved. The report identifies several priority areas which can be altered to strengthen the system:

- *Licensing board resources* need to be improved to deal with the large case backlogs and allow increased monitoring of possible diversion activities. This can be accomplished through greater sharing of board resources and personnel, cross-jurisdictional sharing of cases, cross-training of Board investigators and additional funding to licensing boards.
- *Practitioners* should be more informed of the drug diversion problem and techniques used by drug diverters. Both professional associations and licensing boards should assume a leadership role in this education effort.
- *More information* on physicians who dispense drugs should be available. The current drug tracking system is weak in the area of drugs dispensed by physicians in their offices.
- *More information* on the illicit demand for prescription drugs should be available. Better information on drug demand will help medical professionals and law enforcement officials guard against diversion of certain "hot" drugs. The availability of such information can be improved through greater sharing of intelligence gathered by licensing boards and development of a survey mechanism for emergency room and drug treatment program admissions.

"This report of the Iowa PADS Policy Group marks not the end of a process, but the beginning of a coordinated effort to drive this public health problem from Iowa."

Conclusion

The Regulatory Group, after careful study and investigation of available data, concluded that Iowa does not have an overwhelming problem with prescription drug diversion but that it does occur. Many individuals and agencies had initiated actions to address this problem before PADS began; recommendations of the PADS Policy Group are designed to improve these programs.

"Although many innovative steps have been taken and much progress has been made, complex problems are not solved quickly or easily," the PADS report concludes. "Thus, this report of the Iowa PADS Policy Group marks not the end of a process, but the beginning of a coordinated effort to drive this public health problem from Iowa."

The PADS Policy Group is still active and will continue meeting to consider ways for implementing recommendations contained in the report.

Questions and Answers —

An Interview with Norman Johnson, R.Ph., Executive Secretary, Board of Pharmacy Examiners

Physician's Role in Preventing Drug Diversion

While not a serious problem, diversion of prescription drugs for illegal uses does occur in Iowa. Much of this diversion involves health care professionals who are unaware of how prescription drug diversion works. Norman Johnson, executive secretary, Iowa Board of Pharmacy Examiners, provides some enlightening information concerning drug diversion and what physicians can do to prevent it.



Norman Johnson, R.Ph.

In your opinion, how serious is Iowa's prescription drug diversion problem? How do we compare to other states?

Iowa's prescription drug diversion problem is 'middle of the road' and certainly not as serious as many of the more heavily populated states. The diversion problem here is similar in magnitude to that of our midwest neighbors, particularly those to our north, south and west.

Who diverts prescription drugs to illegal uses? How does prescription diversion work?

Prescription drugs are diverted by "con" artists who perpetrate scams on unsuspecting health professionals and by thieves who steal drugs from sources where they are stocked. They are also diverted by health professionals themselves, including employees of hospitals, pharmacies and physicians' offices. It is estimated approximately 10% of these drugs are diverted through robbery and breaking and entering. The other 90% involve dishonest, disabled, deceived or dated health professionals.

In Iowa, most diversion occurs through confidence schemes which prey on the unsuspecting physician or pharmacist. These schemes involve providing false or misleading information to the physician so prescriptions will be issued, altering or copying of those prescriptions to obtain greater quantities of drugs, theft of prescription blanks from physicians' offices and subsequent passage of

forged prescriptions in pharmacies throughout the state.

Which drugs are the most popular targets for prescription diversion?

Drugs with the highest dollar value "on the street" are Dilaudid®, Morphine and Percodan®. Other drugs such as Tylenol® with Codeine, Darvon® or Darvocet®, Valium®, Talwin®, Ritalin® and narcotic-containing cough products, are also popular. Recreational use of prescription drugs apparently involves multidrug use. Therefore, any drugs which contain narcotics, stimulants and to some extent, depressants, are subject to diversion.

Are Iowa physicians aware of the prescription diversion problem?

I'm sure most Iowa physicians are aware that some prescription drugs are being used recreationally. However, I doubt if many are aware of the ways these drugs are diverted for illicit use or the scope of the problem, both locally and nationally.

Are there many Iowa physicians who knowingly participate in prescription drug diversion? What can be done to solve this problem?

Iowa has its share of dated, disabled and dishonest physicians. However, I am not aware

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DRUG DIVERSION SCAMS: TWO SCENARIOS

Con artists can be extremely ingenious in creating schemes for diversion of prescription drugs. To give physicians an idea of typical "scams" used by such people, the Iowa Board of Pharmacy Examiners provided the following drug diversion confidence schemes recently perpetrated in Iowa.

The "Doctor" With No Office

This scam involved an individual who came to Des Moines posing as a hematologist-oncologist. Using the name and DEA registration number of a legitimate oncologist from the St. Louis, Missouri area, he visited an answering service and obtained a pager and telephone number. Next, he visited a print shop and obtained prescription blanks on which he identified himself as Mid-Iowa Oncology LTD. The blanks used a valid address where an office could be located and the telephone number obtained at the answering service.

He then began writing prescriptions for the drug Dilaudid.® These prescriptions were taken to area pharmacies by 2 accomplices and presented for filling. Being unfamiliar with this "doctor," the pharmacists called the number on the prescription pad and got the answering service. The answering service contacted the "doctor." The "doctor" then called the pharmacist and verified that he had seen the patient and was establishing an office in the area.

This scam was successful for 3 weeks, during which time several thousand Dilaudid® tablets were obtained. Dilaudid® tablets have a street value of $35 to $65 each.

A Family Affair

Pediatricians in eastern Iowa were approached by 3 separate families who said they would soon be moving into the community and would need a physician to treat their children. The children were said to suffer from an attention deficit disorder which had been diagnosed by their previous pediatrician. According to "family" members, the prescribed treatment for these children was Ritalin® 20 mg., 3 times a day. During the visit, the children exhibited disruptive behavior which reinforced the parents' statements.

After exchanging information with the physician, the parents indicated the children's Ritalin® was nearly exhausted. They asked if they could obtain a prescription to last until they moved into their new home and the children's records could be transferred from their former physician. Most of the local pediatricians gave them a prescription for 100 Ritalin® 20 mg tablets. These were filled at local pharmacies.

The 100 Ritalin® tablets were then sold to another individual for $100. This individual combined the Ritalin® tablets with Talwin®, also obtained through a scam. One tablet of each drug was sold to users in Omaha and Kansas for $20 a set. The street names for this combination are "Kibbles and Bits" or "One and One."



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The Oakdale Sample — A Description of the Modern Substance Abusing Population

WILLIAM MELLER, M.D. SARAH KEAFER,
and RUBEN WIDMER, M.D.
Iowa City, Iowa

The authors describe a sample of 305 consecutive admissions to the University of Iowa's Oakdale Chemical Dependency Center. Diagnostic heterogeneity, multiple physical and psychiatric complications are stressed. The paper suggests Iowa practitioners in the field of substance abuse are not dealing with a homogenous population of alcoholics, but rather are challenged with a younger more heterogeneous population of poly-substance abusers who often carry multiple diagnoses.

SUBSTANCE ABUSE CONTINUES to be one of the most tragic and costly diagnostic categories facing the healthcare professional. Its associated behavioral disturbances impact negatively in many areas of society and include depression and suicide, violence and homicide, family discord and divorce, decreased productivity, and motor vehicle accidents.[1-5] The problem is widespread and, according to DSM III, about 16% of the national population reports some problem associated with alcohol.[6] Prevalence data on other forms of drug abuse is difficult to obtain since patterns of abuse are continually changing. Recent Epidemiologic catchment area data suggests a lifetime drug abuse prevalance rate of 5-6%.[4, 7]

We in Iowa are clearly not immune. A study done by Mulford and Fitzgerald in 1979 identified 7.9% of the state population as "problem drinkers."[8] A more recent survey conducted by the same research team in 1985 suggested a problem drinking rate of 9.6%. Their study also suggests the traditionally decreased prevalence in the farm population has disappeared with a "problem drinking" rate of 4.3% in 1961 jumping to approximately 12% in 1985.[9] According to another large Iowa study during 1974-1976, 10-15% of the population reported experience with illegal drugs, with 2% of the

The authors are affiliated with the University of Iowa College of Medicine. Dr. William Meller is a resident in the Department of Psychiatry. Sarah Keafer is a research assistant in the Department of Pediatrics, and Dr. Ruben Widmer is a professor in the Department of Family Practice.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF AUGUST 1986

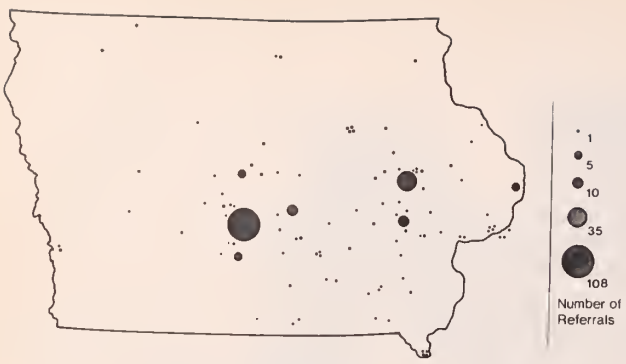


Figure 1

urban population and 1% of the rural population reporting that they, or a family member, had been arrested and booked on drug charges.[10]

Discovering effective methods for treatment of substance abuse is therefore an important local, as well as national, issue. This process is greatly complicated by the impressive number of psychiatric symptoms and the marked diagnostic heterogeneity found in the substance abusing population. What follows is a description of a sample of 305 substance abuse patients consecutively admitted to the University of Iowa Oakdale Chemical Dependency Center.

This facility received referrals from the entire state of Iowa as well as neighboring out-of-state communities. During the 1 year sampling period (Sept., 1984-Sept., 1985), patients came from almost half the counties in Iowa with an over representation of the southeastern quadrant of the state (Figure 1). Because of this state-wide catchment area, we believe this population may be of general interest to Iowa physicians.

Our purpose in reporting a descriptive paper is to help local practitioners understand current trends and problems in Iowa's substance abusing population. It will become clear Iowa's physicians are not faced with a homogeneous population of "alcoholics," rather we are challenged by a heterogeneous population, often suffering from multiple psychiatric diagnoses and psychiatric as well as medical complications of abuse.

TABLE I
DIAGNOSES* AVAILABLE THROUGH THE ODI:

Major depressive disorder (MDD)
Antisocial personality disorder (ASPD)
Alcohol obuse
Alcahal dependence
Other substance abuse with or without dependence including:

- Cannabis
- Cocoine
- Amphetamine
- Sedative hypnatic
- Norcotic
- Hallucinogens or PCP

* Diagnoses based on *DSM-III* criteria.

Method

Individuals in this study were interviewed within the first week of admission, and only patients who left the facility prior to interview are excluded from the study. All patients received a structured diagnostic interview, "The Oakdale Diagnostic Interview" (ODI), which was a part of the facility's routine intake procedure. The ODI is comprised of the substance abuse, depression, anorexia, and antisocial personality disorder portions of the NIMH DIS.[11] Added to this is a psychotic questionnaire adopted from the MMPI.[12] The ODI allows us to assign the diagnoses listed in Table I which are defined by DSM III criteria.[6]

TABLE II
NUMBER OF PATIENTS WITH ALCOHOL PROBLEMS FROM SAMPLE POPULATION OF 305

Diagnosis	*N*	%
Alcahal abuse (alane)	14	5
Alcahal dependence	83	27
Alcahal dependence or obuse plus ony other drug obuse	177	58
Total with alcahal problem	274	90
Potients withaut alcohal diagnasis	31	10

Results

Of the 305 patients included in this study, all but 4 met criteria for substance abuse or dependence. The 4 patients who did not meet full criteria had "used" a variety of drugs and may also have met criteria for other psychiatric disorders. 251 of the patients were male (82%), 54 were female (18%). The mean age ± standard deviation was 28.8 ± 9.3 with a range of 15 to 68 years.

Table II displays the number of patients who

TABLE III
NUMBER OF PATIENTS WHO AT ONE TIME MET CRITERIA FOR ABUSE OF THE FOLLOWING DRUGS. (ALMOST ALL WERE USED IN COMBINATION WITH ALCOHOL OR OTHER DRUGS.) (TOTAL POPULATION = 305)

Diognosis	*N*	%
Connobis	161	53
Cocoine	53	17
Amphetomine	123	40
Sedotive hypnotic	67	22
Norcotic	57	19
Hollucinogen or PCP	40	13
Totol drug obuse	204	67

TABLE IV
DRUG OF CHOICE

Drug	*N*	%
Alcohol	211	70
Connibos	41	13
Cocoine	16	5
Amphetomine	9	3
Sedotive hypnotic	5	2
Norcotic	12	4
Hollucinogen or PCP	2	¢1
Alcohol plus onother drug	9	3

TABLE V
ASSOCIATED DIAGNOSES AND SEVERE OR LIFE THREATENING SYMPTOMS (TOTAL N = 305)

Symptoms	*N*	%
Mojor depressive disorder (primory or secondory)	124	41
Antisociol personolity disorder	155	51
Potients who experienced $ 3 psychotic symptoms while obusing or withdrowing	136	45
Potients with Hx of suicidol ideotion	183	60
Potients with Hx of suicide ottempt	73	24
Auto occident while driving intoxicoted	110	36
Accident involving personol injury	62	20

met full criteria for alcohol abuse or dependence. Notice that the majority of "alcoholics" in this population, 177 of 274 (65%) met criteria for abuse of at least one other drug with only 97 (35%) sticking to alcohol alone.

Table III displays the number of patients who at some time have met criteria for various types of drug abuse. The vast majority abused these drugs in combination with alcohol and/or other drugs. Only 27 drug abusers (9%) did not also meet criteria for alcohol abuse or dependence.

Since many of our patients are "poly" substance abusers, we asked each patient to choose his or her primary drug of choice. Two hundred eleven (70%) reported that their drug of choice was alcohol. Nine patients (3%) used alcohol in combination with other drugs but were unable to choose a favorite. The remainder of the patients chose the various drugs listed in Table IV.

The majority of our patients also met DSM III criteria for at least 1 psychiatric diagnosis other than substance abuse. As noted in Table V, 41% met criteria for major depressive disorder, and 51% had antisocial personality disorder. Table V also lists associated symptoms which are severe and could become life threatening. These symptoms include psychosis, suicidal ideation, suicide attempt, and being the driver in a motor vehicle accident while intoxicated. Once again, the majority of our patients had experienced at least 1 of these symptoms. (Obviously, we do not intend this Table to present all potentially life threatening complications. This population is also at risk for death from liver disease, accidents, overdose, violence, and many others.)[8, 13-14]

Discussion

After a brief examination of the descriptive statistics given in the Tables, it is obvious this substance abusing population is quite complicated and diverse. A very small percentage, if any, of this group could be described as "classic alcoholics" and treatment of such a population demands a sophisticated degree of medical as well as psychiatric knowledge. The majority met criteria for alcohol abuse/dependence and were therefore at risk for all of the alcohol related complications. (In fact, in a sub population consisting of the first 44 patients to receive liver function tests, 41% had at least minor abnormalities in liver function.) Alcohol complications would not be unexpected, but the majority of these patients were also at risk for complications associated with other drugs of abuse, e.g. sedative hypnotic, or narcotic withdrawal, amphetamine psychosis, etc. A surprisingly high number of these patients had experienced episodes of frank psychosis or delirium (Table V), and 60% admitted to periods of suicidal ideation.

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Besides the diversity of substances used, the substance abusing population is further complicated by the high frequency of 2 other major psychiatric diagnoses; antisocial personality disorder (ASPD), and major depressive disorder (MDD). These diagnoses coexisting with substance abuse may well lead to a different course and possibly different outcome. Cadoret, *et al*, recently conducted a study in which alcoholics with ASPD were more likely to report psychiatric symptoms consistent with anxiety, depression, mania, and psychosis, than were nonantisocial alcoholics.[15] Presence of these symptoms may influence outcome greatly. McLellan, *et al*, have shown that substance abusing populations who have high global psychiatric symptom ratings tend to have the poorest outcome.[16] Recent work done at the Knoxville Veterans' Administration Medical Center suggests alcoholics with ASPD are "more likely to have an early onset of alcoholism, be involved with other illicit drugs, and show evidence of more problems with control of their drinking."[17] These individuals may also be more likely to experience alcohol related motor vehicle accidents.[5]

Coexistence of MDD, whether primary or secondary to substance abuse, confers another set of complications on the abusing population. Slater and Linn have shown that "being depressed" is associated with alcoholic relapse and readmission.[18] Both Witters, *et al*, and Black, *et al*, working with 2 Iowa substance abuse populations have shown the presence of MDD, particularly if accompanied by nonalcohol substance abuse to be an important risk factor for suicidal behavior.[1, 19] (It should be noted that almost 1/4 of our population had made suicide attempts, Table V.)

In summary, we have described a local substance abusing population. Whether or not this sample is representative of Iowa's substance abusers is a function of referral bias and unknown. Nevertheless, we felt the diagnostic heterogeneity of this population was striking and knowledge of the multiple and often serious complications arising in this sample would be helpful to practicing physicians in all specialties.

References

The references noted in this article are available on request either from the author or the editors of IOWA MEDICINE

MERCY HOSPITAL MEDICAL CENTER
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GERIATRIC UPDATE

SEPTEMBER 10, 1986

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Enlarged Median Nerve Of Macrodactyly Associated With Carpal Tunnel Syndrome

JOHN G. GANSKE, M.D.
Des Moines, Iowa

This brief case report describes a rare additional cause of carpal tunnel syndrome — compression of an enlarged median nerve associated with macrodactyly.

CARPAL TUNNEL is the most common compression neuropathy in the upper extremity. In contrast, macrodactyly is one of the rarest congenital anomalies. Median nerve enlargement of macrodactyly has rarely been reported as a cause of carpal tunnel syndrome.[1, 2]

Case Report

A 28-year-old carpenter with long and ring finger macrodactyly had several weeks of progressive right hand paresthesias and a firm 3 cm midthenar tumor. (Figure 1) He had a positive Phelan's sign, a positive Tinel's at the tumor and twice normal 2-point discrimination in the median nerve distribution.

The transverse carpal ligament was divided and the palmar tumor was a 3 cm diameter grossly enlarged median nerve with post-compression swelling and 3 enlarged common digital nerves to the macrodactylous fingers. (Figure 2) Proximal to the compression, the nerve was about 2 cm diameter extending up into the forearm. An external neurolysis of the nerve completed the decompression. (Figure 3)

Postoperatively, the parasthesias promptly resolved and the 2-point discrimination is 3 mm in the median nerve distribution.



Figure 1

The author is in the private practice of plastic and reconstructive surgery in Des Moines, Iowa.



Figure 2



Figure 3

Discussion

Carpal tunnel syndrome is usually caused by nonspecific synovitis. The list of systemic conditions associated with carpal tunnel syndrome is long and includes thyroid imbalance, pregnancy, menopause, and diabetes, among others. As many as 60% of patients with distal radius fractures have symptoms of compression of the median nerve sometime during their treatment.

Anatomic variations causing carpal tunnel are less frequent and include local tumors such as lipoma or ganglia, aberrant muscles such as palmaris profundus, palmaris longus, anomalous lumbrical muscles or flexor superficialis muscles. This case presents a rare additional cause of carpal tunnel syndrome — compression of an enlarged median nerve associated with macrodactyly.

This patient has a typical macrodactyly. Males are more commonly affected than females. Adjacent 2 digit involvement is the most usual presentation and the fingers will commonly diverge from each other. The sensibility is usually normal, but the fingers tend to stiffen with age.

Macrodactyly is rare, accounting for less than 1% of all upper extremity anomalies.[3] All of the tissues of these fingers are usually enlarged. In addition to the enlarged digital nerves, the median or ulnar nerve is frequently enlarged proximal to enlargement of the other tissues of the finger[4, 5] as was this patient's median nerve. The rarity of macrodactyly probably accounts for its infrequency as a reported cause of carpal tunnel syndrome.

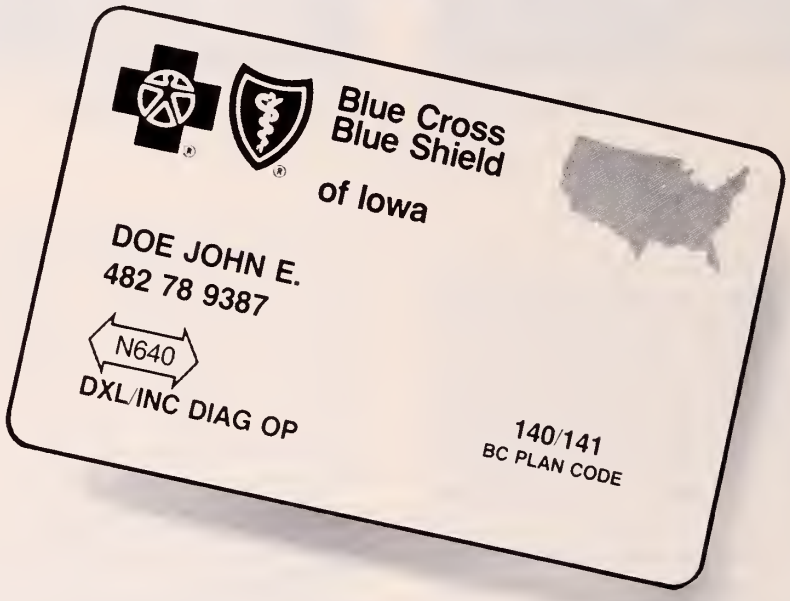
Summary

This case represents an unusual cause of carpal tunnel syndrome: enlarged median nerve associated with macrodactyly. Other common and uncommon causes of carpal tunnel syndrome are discussed briefly.

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COMMENTING EDITORIALLY



GHOULISH EXPERIMENTS: SHOCKING BENEFITS

AN INTERESTING HISTORICAL VIGNETTE which may have a remote relationship to a presently used medical modality appeared in the January 1986 issue of the Scottish Medical Journal.* In November, 1818, the body of a hanged murderer was delivered to the University of Glasgow promptly after execution for experimental purposes. Galvanic experiments were done in attempts to resuscitate the dead murderer.

Matthew Clydesdale, age 35, was hanged for murdering with a coal pick an old man during a drunken encounter. It is recorded he was suspended from the gallows for nearly an hour and made no convulsive movements after he was dropped. Clydesdale's body was brought to the University within 10 minutes of being cut down. His face appeared normal, neither livid nor swollen. His neck was not dislocated.

"The professors were intent on restoring life by electric stimulation. Pointed metallic rods connected to a battery were applied to various parts of the body to stimulate various actions."

The professors were intent on restoring life by electric stimulation. Pointed metallic rods connected to a battery were applied to various parts of the body to stimulate various actions. For example, application of the rods to the heel and the spinal cord at the level of the atlas caused violent extension of the bent knee.

In an attempt to restore breathing, the rods were connected to the left phrenic nerve and the diaphragm. The chest heaved and fell and there was "relaxing and retiring of the diaphragm." Application of current to the supraorbital nerve and the heel caused "most extraordinary grimaces." Variation of the current caused facial expressions of rage, horror, despair, anguish and ghastly smiles. Truly, those experiments must have bordered on the ghoulish.

"Thus, unwittingly, perhaps the first suggestion of an electric defibrillator was born. Many lives have been saved by use of electric stimuli to the chest wall to alter abnormal heart rhythm."

In the original report, the experimenters concluded direct stimulation of the phrenic nerve appeared the most promising procedure for restoration of life. Prophetically, it was suggested that 2 brass knobs connected to the battery and firmly placed on the skin over the phrenic nerve and the diaphragm might be effective.

Thus, unwittingly, perhaps the first suggestion of an electric defibrillator was born. Many lives have been saved by use of electric stimuli to the chest wall to alter abnormal heart rhythm. Perhaps we are indebted to Professors James Jeffary and Andrew Ure at Glasgow University for carrying out such a unique experiment, albeit in an illegal manner. — M.E.A.

* Pattison, F.L.M., The Clydesdale Experiments: An Early Attempt at Resuscitation. Scottish Medical Journal, 31:50-52, January 1986.

VERNE L. SCHLASER, M.D.
1910-1986

MEDICINE AND THE people have lost one of their great champions! Verne L. Schlaser died May 23, 1986, at his home in Cape Fair, Missouri, of leukemia.

Verne was born June 11, 1910, at Keswick, Iowa, and received his primary education at Thornburg, Iowa, graduating from high school in 1928. He received the M.D. degree at the University of Iowa, graduating in 1938, and served his internship at Iowa Lutheran Hospital. In 1939 he was licensed in Iowa and Missouri. After serving in the Navy in World War II, he established his practice in Des Moines.

Verne was active locally and nationally in the medical profession. He was a diplomat of the American Academy of Family Practice; charter member of the Iowa Academy of Family Physicians (IAFP); a past president and national delegate of IAFP.

He was an active member in the Iowa Medical Society, serving a term as president. Verne was a physician who served his patients and the medical profession with equal concern and diligence.

He was a member of the Masonic Lodge in Des Moines, the Valley of Des Moines Consistory, Za Ga Zig Shrine and IOOF. He was a member of the Methodist Church in Des Moines and later of the Methodist Church in Kimberling City, Missouri.

He and his wife, Eleanor, raised and educated 3 daughters. They have 5 grandchildren. In 1979 Verne and Eleanor retired to their home at Cape Fair, Missouri on Lake Tablerock. Here, they found a way to serve others. He joined the Rescue Unit and was on call for ambulance service. They organized a Senior Citizens Group. Recently, Verne received the 1986 Jefferson Award for outstanding community service in Missouri. He is now one of 15 finalists selected nationwide.

He served the people wherever he lived and touched their lives. All of us who knew him will feel the void he leaves in our lives. We will miss him for he was truly the good physician and a close friend. — WM. A. CASTLES, M.D., *Dallas Center*

Reprinted from the August, 1986, Polk County Medical Society Bulletin.

Letter to the Editor

ATTENTION NEW PHYSICIANS

Dear Editor:

I cannot help but comment on your editorial in the June issue of "Iowa Medicine." I am in hopes that all of our "new" physicians in the state will read this and take heart. I, too, feel that medicine is still a joy and that dealing with the people continues to be the best part of it.

I have been reading your column now for quite some time and feel that your comments are consistently pertinent and to the point. — CRAIG A. ROSE, D.O., *Mercy Internship Class of 1971, Dubuque, Iowa.*

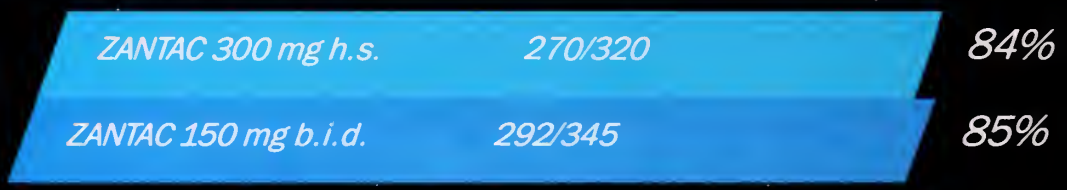
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No significant interference with the hepatic cytochrome P-450 enzyme system at recommended doses

ZANTAC 300 mg h.s. had no significant drug interactions with theophylline or warfarin. The bioavailability of certain medications whose absorption is dependent on a low gastric pH may be altered when ZANTAC or other medications which decrease gastric acidity are administered.



*It is not known exactly how much acid inhibition is needed to heal ulcers.

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See next page for references and Brief Summary of Product Information.

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2. Maintenance therapy for duodenal ulcer patients at reduced dosage after healing of acute ulcers. No placebo-controlled comparative studies have been carried out for periods of longer than one year.
3. The treatment of pathological hypersecretory conditions (eg, Zollinger-Ellison syndrome and systemic mastocytosis).
4. Short-term treatment of active, benign gastric ulcer. Most patients heal within six weeks and the usefulness of further treatment has not been demonstrated. Studies available to date have not assessed the safety of ranitidine in uncomplicated, benign gastric ulcer for periods of more than six weeks.
5. Treatment of gastroesophageal reflux disease. Symptomatic relief commonly occurs within one or two weeks after starting therapy. Therapy for longer than six weeks has not been studied.

In active duodenal ulcer; active, benign gastric ulcer; hypersecretory states; and GERD, concomitant antacids should be given as needed for relief of pain.

CONTRAINDICATIONS: ZANTAC® is contraindicated for patients known to have hypersensitivity to the drug.

PRECAUTIONS: General: 1. Symptomatic response to ZANTAC® therapy does not preclude the presence of gastric malignancy.
2. Since ZANTAC is excreted primarily by the kidney, dosage should be adjusted in patients with impaired renal function (see **DOSAGE AND ADMINISTRATION**). Caution should be observed in patients with hepatic dysfunction since ZANTAC is metabolized in the liver.

Laboratory Tests: False-positive tests for urine protein with Multistix® may occur during ZANTAC therapy, and therefore testing with sulfosalicylic acid is recommended.

Drug Interactions: Although ZANTAC has been reported to bind weakly to cytochrome P-450 in vitro, recommended doses of the drug do not inhibit the action of the cytochrome P-450-linked oxygenase enzymes in the liver. However, there have been isolated reports of drug interactions which suggest that ZANTAC may affect the bioavailability of certain drugs by some mechanism as yet unidentified (eg, a pH-dependent effect on absorption or a change in volume of distribution).

Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no indication of tumorigenic or carcinogenic effects in lifespan studies in mice and rats at doses up to 2,000 mg/kg/day.

Ranitidine was not mutagenic in standard bacterial tests (*Salmonella, E coli*) for mutagenicity at concentrations up to the maximum recommended for these assays.

In a dominant lethal assay, a single oral dose of 1,000 mg/kg to male rats was without effect on the outcome of two matings per week for the next nine weeks.

Pregnancy: *Teratogenic Effects*: *Pregnancy Category B*: Reproduction studies have been performed in rats and rabbits at doses up to 160 times the human dose and have revealed no evidence of impaired fertility or harm to the fetus due to ZANTAC. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: ZANTAC is secreted in human milk. Caution should be exercised when ZANTAC is administered to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Use in Elderly Patients: Ulcer healing rates in elderly patients (65 to 82 years of age) were no different from those in younger age groups. The incidence rates for adverse events and laboratory abnormalities were also not different from those seen in other age groups.

ADVERSE REACTIONS: The following have been reported as events in clinical trials or in the routine management of patients treated with oral ZANTAC®. The relationship to ZANTAC therapy has been unclear in many cases. Headache, sometimes severe, seems to be related to ZANTAC administration.

Central Nervous System: Rarely, malaise, dizziness, somnolence, insomnia, and vertigo. Rare cases of reversible mental confusion, agitation, depression, and hallucinations have been reported, predominantly in severely ill elderly patients.

Cardiovascular: Rare reports of tachycardia, bradycardia, and premature ventricular beats.

Gastrointestinal: Constipation, diarrhea, nausea/vomiting, and abdominal discomfort/pain.

Hepatic: In normal volunteers, SGPT values were increased to at least twice the pretreatment levels in 6 of 12 subjects receiving 100 mg qid IV for seven days, and in 4 of 24 subjects receiving 50 mg qid IV for five days. With oral administration there have been occasional reports of reversible hepatitis, hepatocellular or hepatocanalicular or mixed, with or without jaundice.

Musculoskeletal: Rare reports of arthralgias.

Hematologic: Rare reports of reversible leukopenia, granulocytopenia, thrombocytopenia, and pancytopenia.

Endocrine: Controlled studies in animals and man have shown no stimulation of any pituitary hormone by ZANTAC and no antiandrogenic activity, and cimetidine-induced gynecomastia and impotence in hypersecretory patients have resolved when ZANTAC has been substituted. However, occasional cases of gynecomastia, impotence, and loss of libido have been reported in male patients receiving ZANTAC, but the incidence did not differ from that in the general population.

Integumental: Rash, including rare cases suggestive of mild erythema multiforme, and, rarely, alopecia.

Other: Rare cases of hypersensitivity reactions (eg, bronchospasm, fever, rash, eosinophilia) and small increases in serum creatinine.

OVERDOSAGE: There is no experience to date with deliberate overdosage. The usual measures to remove unabsorbed material from the gastrointestinal tract, clinical monitoring, and supportive therapy should be employed.

Studies in dogs receiving doses of ZANTAC® in excess of 225 mg/kg/day have shown muscular tremors, vomiting, and rapid respiration. Single oral doses of 1,000 mg/kg in mice and rats were not lethal. Intravenous LD_{50} values in rat and mouse were 83 and 77 mg/kg, respectively.

DOSAGE AND ADMINISTRATION: Dosage Adjustment for Patients with Impaired Renal Function: On the basis of experience with a group of subjects with severely impaired renal function treated with ZANTAC®, the recommended dosage in patients with a creatinine clearance less than 50 ml/min is 150 mg every 24 hours. Should the patient's condition require, the frequency of dosing may be increased to every 12 hours or even further with caution. Hemodialysis reduces the level of circulating ranitidine. Ideally, the dosage schedule should be adjusted so that the timing of a scheduled dose coincides with the end of hemodialysis.

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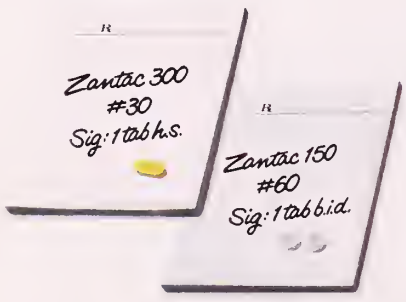
ZANTAC® 300 Tablets (ranitidine hydrochloride equivalent to 300 mg of ranitidine) are yellow, capsule-shaped tablets embossed with "ZANTAC 300" on one side and "Glaxo" on the other. They are available in bottles of 30 (NDC 0173-0393-40) and unit dose packs of 100 tablets (NDC 0173-0393-47).

Store between 15° and 30°C (59° and 86°F) in a dry place. Protect from light. Replace cap securely after each opening.

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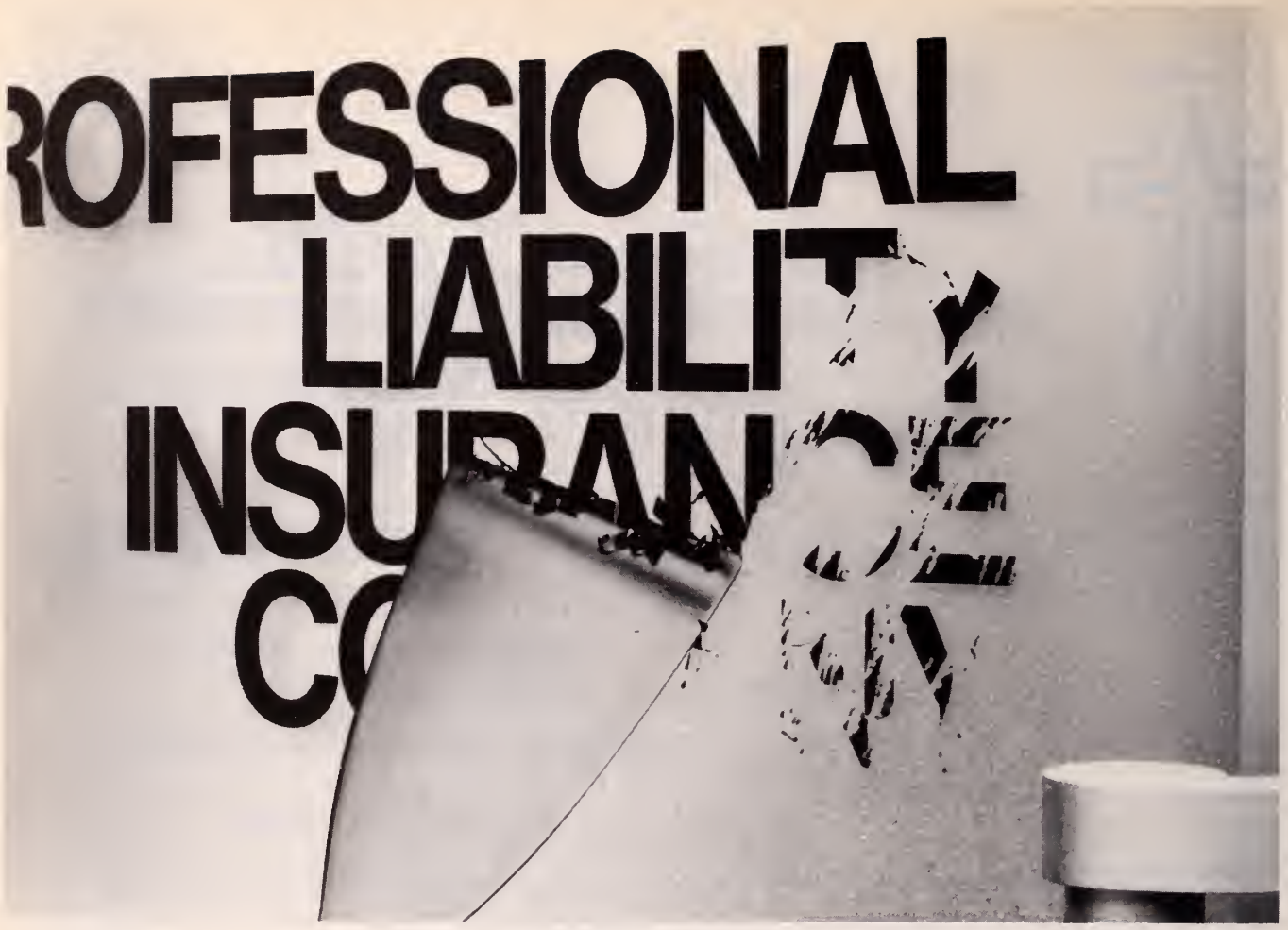
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



OF IRVING, TWAIN AND CONTEMPLATION

In 1820 Washington Irving published his *Sketch-Book*, a series of essays, travel sketches and tales that brought him fame and began the reputation he earned as America's first great contributor to the world's literature. (Such a status could be argued mildly, but I won't do it here.) He began the chapter, "The Voyage," this way: "To an American visiting Europe, the long voyage he has to make is an excellent preparative. The temporary absence of worldly scenes and employments produces a state of mind peculiarly fitted to receive new and vivid impressions. The vast space of waters that separates the hemispheres is like a blank page in existence. . . . From the moment you lose sight of the land you have left, all is vacancy until you step on the opposite shore and are launched at once into the bustle and novelties of another world."

Now consider a later great American writer, Mark Twain. (It seems timely to do that, since this year's recurrence of Halley's comet recalls that Twain died at the time of the comet's last pass-by and he was born at its previous visit in 1835. Not only that, but the centennial of the appearance of *Huckleberry Finn* has just been observed.) It's probably not known to most Iowans that the young Twain, while still Sam Clemens, had connections with Keokuk and Muscatine, assisting his older brother Orion with his newspaper and printing efforts in those towns. In 1866 Twain spent 5 months visiting the Hawaiian Islands, with which he fell thoroughly in love. His descriptive letters home, commissioned by the *Sacramento Union*, brought him his first literary distinction and provided the start of a highly successful career as a public lecturer. In contrast to Irving, though, Twain chafed greatly at his ocean voyage. For one thing the Pacific wasn't at all pacific just then and led Twain to nasty criticism of Balboa for assigning it such an "inappropriate" name.

Twain travelled on a steamer from San Francisco to Honolulu although most ocean travel then was still on sailing ships. In spite of having been a riverboat pilot, he had little good to say for those days spent on the ocean, obviously being more actively disposed than Mr. Irving. Twain also showed his foresight and commercial instincts: "You can rest assured that in the tremendous trade that is to spring up between California and the Islands during the next few years, the fast freight and passengers must be carried by steamers."

"It's probably not known to most Iowans that the young Twain, while still Sam Clemens, had connections with Keokuk and Muscatine, assisting his older brother Orion with his newspaper and printing efforts in those towns."

Twain would no doubt gain huge satisfaction that the average commercial flight now takes little longer than 5 hours. Irving, though, would likely not have felt reassured that one's sensibilities could be readied so quickly for new experience. Maybe a corresponding number of days sitting alone on a Hawaiian beach and staring at the sea would have served him. He never tried it. I have, though, and there I read Twain's *Letters from the Sandwich Islands* after I found a sandy spot of refuge from the sound of motor cars; by contrast, somehow, the surf's roar never qualifies as noise pollution.

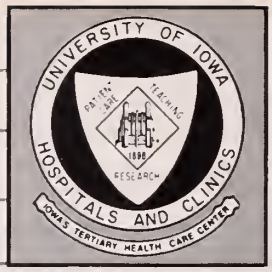
If I fail to connect these ruminations with

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Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW



Reynold Spector, M.D., Editor

GONADOTROPIN-RELEASING HORMONE AND ITS ANALOGS

IN THE EARLY AFTERNOON of June 24, 1971, Andrew V. Schally announced the primary amino acid sequence of gonadotropin-releasing hormone (GnRH) at a meeting of the Endocrine Society in San Francisco: pyro Glu[1]-His[2]-Trp[3]-Ser[4]-Tyr[5]-Gly[6]-Leu[7]-Arg[8]-Pro[9]-Gly[10]-amide. Since then, the advances in our understanding of the mechanism by which GnRH releases pituitary luteinizing hormone (LH) and follicle-stimulating hormone (FSH) and our appreciation of the clinical potential of GnRH have increased coincidentally. Last year Ziporyn, writing in *JAMA*, observed that "There's almost no subspeciality in medicine that will be left untouched by the advances associated with GnRH or its analogs."[1] The degree of interest surrounding these agents was further evidenced in February 1986 when the Endocrine Society journal, *Endocrine Reviews*, took the unprecedented action of devoting an entire issue to a single subject area: the basic and clinical science of GnRH.[2] Over the past 12 months, this peptide achieved another milestone when the first GnRH analog, Leuprolide (Abbott), received FDA approval for the treatment of prostate cancer. The present article describes key events that led to our current understanding of the clinical relevance of these agents and some of the uses for which they now appear suitable.

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

Pharmacological Considerations

Molecular Structure and Pattern of Administration: Solid phase peptide synthesis (Merrifield synthesis) coupled with purification by high pressure liquid chromatography (HPLC) have made it possible to synthesize many GnRH analogs and, thereby, develop a sophisticated understanding of structure-activity relations. To date, the number of such analogs tested is in the thousands, reflecting the keen interest of individual laboratories, government programs, and industry.

It was recognized that proteolytic degradation of GnRH and its analogs occurs through peptide cleavage adjacent to the sixth amino acid position (Gly). Substitution of dextrorotary amino acids at the sixth amino acid position resulted in a marked enhancement of metabolic stability and, happily, the stabilization of a beta-turn in the molecule that appears essential for activity. Hydrophobic substituents such as D-Ala[6], D-Ser(tButyl)[6] (Buserelin), D-Trp[6] (Tryptorelin), and D-Leu[6] (Leuprolide) have been useful for this purpose (See Table). Further substitution of an ethylamide for the tenth amino acid (glycine-amide) enhances the affinity of analogs for the GnRH receptor by 10- to 200-fold and has given rise to superagonists.

Antagonists are typically created by replacements in the first 3 amino acids with hydrophobic D-amino acids. During recent years, agonists and antagonists have been prepared with hundreds to thousands of fold the activity of the natural sequence hormone.

In addition to structure-activity considerations, a second observation has influenced the development of GnRH analogs and has increased their potential as clinically useful

agents: the action of the agents is highly dependent on the pattern of administration. Knobil and his colleagues first showed in an unrestrained, nonhuman primate model that pulsatile administration of GnRH maintained pituitary responsiveness, while continuous administration led to functional desensitization.[3] Thus, intermittent GnRH administration leads to pulsatile gonadotropin release, while continous delivery (especially of metabolically stable analogs) produces a paradoxical suppression of LH and FSH secretion.

The pattern of administration and the specific agent chosen are dependent, then, upon the desired clinical effect. Pituitary gonadotrope suppression may be achieved using continuous administration of short-acting GnRH or with intermittently delivered metabolically stable analogs such as Leuprolide. Agonism typically produces gonadotropin release prior to the onset of desensitization. Antagonists may also be employed for the purpose of suppression; they do not produce the initial release of LH measured in response to GnRH agonists.

Conversely, pituitary responsiveness may be provoked using rapidly metabolized agonists, or GnRH itself, administered in a pulsatile manner. Administration may be conveniently accomplished using portable small pumps like those utilized for insulin.

Distribution and Clearance: Distribution of GnRH of hypothalamic origin is limited to the portal system, while that from exogenous sources is widely distributed in the extracellular fluid. A single intravenous injection results in clearance that is modeled by a two-compartment open system with half-life values of 5 minutes and 15 to 60 minutes. The typical volume of distribution is 10 to 20 liters; a clearance (MCR) of 750 to 1,500 ml/min and an average transit time of 30 minutes is measured. For analogs with D-amino acids in the sixth position, the MCR is similar to the native hormone but clearance rates are slower.

Extinction of the response to pulsatile GnRH administration is associated with loss of the peptide through degradation in serum or following uptake into the liposomal compartment. While fragments smaller than the decapeptide have no measurable pituitary effects, actions of fragments at extrapituitary sites have not been rigorously excluded. The appearance of immunoreactive, biologically active GnRH in the urine suggests renal clearance. Moreover, renal failure slows GnRH clearance but hepatic failure has no effect.

Routes of Administration: GnRH and its analogs are typically administered by subcutaneous (injection or implant), intravenous, and intranasal routes. So far, no active congener of GnRH has been identified for oral administration. Optimism remains high for such an agent, however, since larger peptides such as cyclosporin A may be given orally. Smaller, rigid structures of only the active site may be identified, as has happened with captopril.

Intranasal administration has been successfully used even though bioavailability is low (1-4%) and depot effects persist up to 24 hours. Also, individual variability in response, usually because of nasal congestion, has been frequently reported.

Subcutaneous administration is useful for suppression of gonadal function. Plasma peaks are predictably less crisp than intravenous injections and, as a result, higher doses are usually required. Depot effects have also been reported, although the precise basis for this remains unclear. Biological availability of GnRH administered by this route typically exceeds 80%.

Other routes include intramuscular (for which the plasma levels of Leuprolide appear similar to subcutaneous), rectal (bioavailability is low, 0.1-1%), vaginal (50-90% absorption for Leuprolide; enhanced by addition of organic acids), intraperitoneal (limited experience), and percutaneous (typically 0.1-0.5% biological availability, which is enhanced by dimethyl sulfoxide).

Clinical Applications of GnRH and Its Analogs

As one considers the clinical usefulness of GnRH and its analogs, it is crucial to remember that the agent selected and its pattern and mode of delivery need to be related to the nature of the disorder being treated. These considerations are, in fact, the basis for the tremendous potential for the use of GnRH and its analogs in a variety of situations.

Endocrine-Responsive Cancers: George Beatson, in 1896, showed a regression of metastatic breast cancer following bilateral oophorectomy.[4] This remarkable demonstration, as

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well as the observations of subsequent investigators, implicated hormones in the development and growth of tumors and led to the therapeutic approach of endocrine manipulation.

Breast Cancer. About one-third of human breast carcinomas regress following endocrine manipulation. Deprivation of a trophic hormonal influence is the goal of therapy, which has been approached surgically and medically.

The removal of the ovaries of premenopausal patients is commonly done in order to lower circulating levels of gonadal steroids. Tumor regression has been achieved in 25 to 30% of patients.

Tamoxifen, a nonsteroidal antiestrogen, was initially used to effect a chemical castration; in most patients, though, the menstrual cycle is incompletely suppressed. This observation may reflect the action of tamoxifen at the level of the pituitary, where it overrides estrogenic inhibition and results in elevated levels of gonadal steroids. Aromatase inhibitors such as aminoglutethimide have been used in an attempt to inhibit ovarian steroid biosynthesis; inhibition, though, is insufficient to achieve estrogen deprivation.

At the present time, the number of studies that have utilized GnRH analogs for the treatment of breast cancer is limited. In a study of 25 premenopausal patients, daily subcutaneous administration (1-10 mg) of Leuprolide resulted in tumor regression in 44% of the cases. After 10 weeks of therapy, all patients became amenorrheic with profound suppression of gonadotropin and gonadal steroid levels. These effects persisted throughout the remainder of the treatment period (54 weeks). Similar results have been obtained using Buserelin. It appears, then, that GnRH analogs may offer an approach to endocrine manipulation of breast cancer that is at least as effective as surgical castration.

Prostate Cancer. Androgen deprivation produces symptomatic relief (80%) and tumor regression (50%) in patients with prostate cancer. The goal of this therapeutic approach is to achieve castrate levels of testosterone and dihydrotestosterone in order to interrupt the trophic influence of these androgens on the prostate. Surgical and medical approaches to androgen deprivation have been used.

Bilateral orchiectomy is a simple, direct method that eliminates the testicular contributions (95%) to circulating testosterone. It is an operative procedure, though, with the attendant risks of anesthesia and the potential psychological effects of organ loss.

Medical approaches have included the use of exogenous estrogens (diethylstilbestrol, DES), antiandrogens (Flutamide; cyproterone acetate; and progestational agents), and blockers of steroid biosynthesis (aminoglutethimide; ketoconazole). These therapies have resulted in significant side effects such as the fluid retention, painful gynecomastia, myocardial ischemia, and thromboembolic events reported with DES use. Alternatively, GnRH analogs (Leuprolide, Buserelin, Tryptorelin) have produced prostatic atrophy and reduced testosterone levels with minimal side effects; the only undesirable effect is hot flashes, which occur in 50% of patients. Leuprolide induces the same tumor regression, without the adverse effects, as 3 mg of DES daily.

The GnRH analogs are potent agonists that result in chemical castration by desensitization of anterior pituitary gonadotropes. Typical doses are 500 micrograms daily for 1 month and 250 micrograms daily, thereafter. Initially, the GnRH agonists stimulate LH and FSH secretion with a resultant clinical tumor flare. For this reason, antiandrogens such as Flutamide are sometimes used to block the binding of dihydrotestosterone to its cytoplasmic receptor during the initial phase of therapy. After 1 to 2 weeks, gonadotropin release is inhibited with a concomitant fall in androgen levels that persists throughout the entire treatment period of 2 years. According to the United States National Prostatic Cancer Project, a positive objective response to GnRH analogs occurred in 84 of 88 patients (95.4%) with no history of previous therapy. After 2 years of treatment, the probability of continued control is 70% compared to less than 10% with previously used modalities. Death occurred in less than 11% after 2 years; this outcome represents a dramatic improvement over the 50% mortality observed with previously used endocrine therapies.

GnRH analogs, then, offer an effective alternative for the therapy of prostate cancer. Their relative lack of side effects is especially attractive for patients with a history of cardiovascular disease or thromboembolic events and for whom orchiectomy is unacceptable.

(Please turn to page 375)

Before prescribing, see complete prescribing information in SK&F CO. literature or *PDR*. The following is a brief summary.

* **WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically a patient transferred from the single entities of triamterene and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Angiotensin-converting enzyme (ACE) inhibitors can elevate serum potassium; use with caution with 'Dyazide'. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function. Thiazides may add to or potentiate the action of other antihypertensive drugs. Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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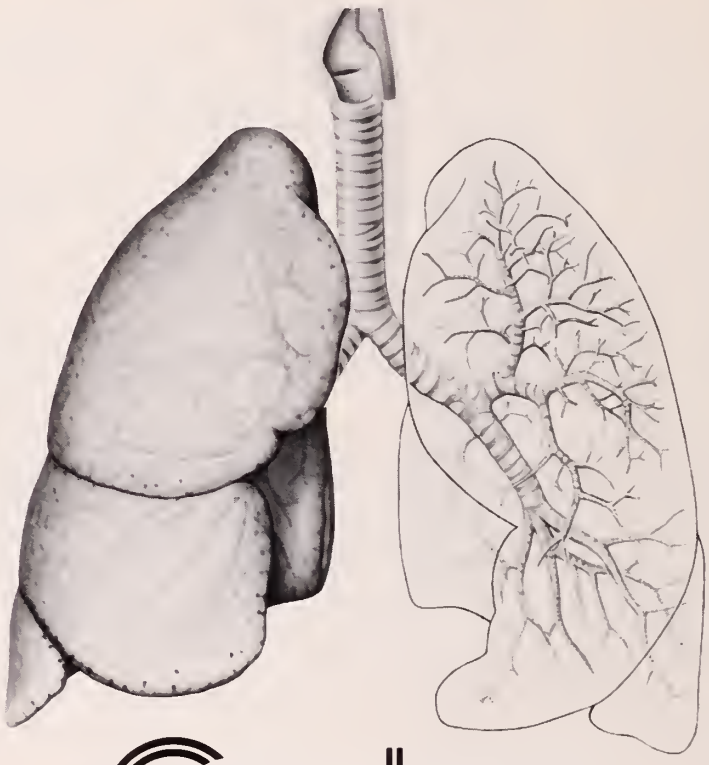
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Haemophilus influenzae, H influenzae, Streptococcus pneumoniae, Streptococcus pyogenes
(ampicillin-susceptible) (ampicillin-resistant)

Note: Ceclor® is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

Ceclor® (cefaclor)

Summary. Consult the package literature for prescribing information.

Indications: Lower respiratory infections, including pneumonia, caused by susceptible strains of *Streptococcus pneumoniae, Haemophilus influenzae,* and *S. pyogenes* (group A beta-hemolytic streptococci).

Contraindications: Known allergy to cephalosporins.

Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- In renal impairment, safe dosage of Ceclor may be lower than that usually recommended. Ceclor should be administered with caution in such patients.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, erythema multiforme, serum-sickness-like reactions): 1.5%; usually subside within a few days after cessation of therapy. These reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%.

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children)
- Abnormal urinalysis; elevations in BUN or serum creatinine
- Positive direct Coombs' test
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly)

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CLINICAL STATUS OF GnRH ANALOGS. Adapted from reference 2.*

Proprietary Name	*Structure*	*Developer*	*Status*	*Dosage Form*
Agonists				
Gonadorelin	GnRH	Ayerst	Diagnostic (United States)	Injection
Cystorelin	GnRH	Hoechst	Cystic ovaries in cattle (United States/Europe)	Injection
Cryptorelin	GnRH	Hoechst	Cryptochidism (Sweden)	Injection
Leuprorelin (Leuprolide)	[D-Leu^6,Pro^{9}NHEt]GnRH	Abbott (TAP)	Prostatic cancer (United States/Germany)	Daily injection
Tryptorelin	[D-Trp^6]GnRH	DeBiopharm/ Lederle	Advanced clinical trial, various indications	Injection, injectable polymer
	[D-Trp^6,Pro^{9}NHEt]GnRH	Salk Institute	Clinical trial, various indications	Injection
Lutrelin	[D-Trp^6,NMeLeu^7, Pro^{9}NHEt]GnRH	Wyeth	Clinical trial	Injection
Buserelin	[D-Ser(tBu)^6,Pro^{9}NHEt]GnRH	Hoechst	Prostatic cancer (West Germany) Advanced clinical trial, various indications	Daily injection, followed by nasal
(Zoladex)	[D-Ser(tBu)^6, Aza-Gly^{10}]GnRH	ICI Ltd.	Prostatic cancer	Polymer implant
Histrelin	[D-His(Bzl)^6, Pro^9-NHEt]GnRH	Population Council/Ortho	Clinical trial, endometriosis	Daily injection
Nafarelin acetate	[D-Nal(2)^6]GnRH	Syntex	Advanced clinical trial, various indications	Nasal/injectable polymer
	[D-Nal(2)^6,Aza-Gly^{10}]GnRH	Syntex	Veterinary trials, various indications	Polymer implant
Antagonists				
	[N-Ac-D-pCl-Phe^1,D-pCl-Phe^2, D-Trp^3,D-Arg^5,D-Ala^{10}]GnRH	Organon	Clinical pharmacology	Injection
	[N-Ac-D-Nal(2)^1,D-pCl-Phe^2, D-Trp^3,D-hArg(Et$_2$)^6, D-Ala^{10}]GnRH	Syntex	Clinical pharmacology	Injection

*The nomenclature in this table (and the remainder of this article) is to specify the amino acids differing from the naturally occurring releasing hormone.

Central Precocious Puberty: Premature activation of the hypothalamic-pituitary-gonadal axis before the age of 8 years in girls or 9 years in boys may result in undesirable effects that include psychosocial difficulties and adult short stature due to early epiphyseal closure. Most of these cases are idiopathic or are caused by hypothalamic lesions such as hamartomas. In the past, children requiring therapy have received progestational agents or antiandrogens. Although these agents successfully stop menses and produce some regression of secondary sexual characteristics, they typically fail to affect the accelerated rate of skeletal maturation and also produce significant side effects. Long-acting GnRH agonists, though, successfully halt the premature release of GnRH and reduce all of the subsequent undesirable side effects in a fashion that is free

(Please turn to page 376)

of serious side effects. Buserelin therapy for 8 weeks with daily subcutaneous injections results in a suppression of nocturnal gonadotropin release that is rapidly reversed after the treatment period is completed.

Delayed Puberty: Puberty is heralded by an increase in the amplitude and frequency of nocturnal LH pulsations. Episodic release of GnRH in an appropriate pattern and amount is a critical factor underlying this process. In some children the GnRH signal appears inadequate, either in pattern or amount, and puberty is delayed.

Intermittent administration of GnRH has been successfully used as a catalyst for the development of puberty. Patients with Kallman's syndrome (congenital GnRH deficiency and anosmia) have responded with a normal progression of pubertal events following pulsatile GnRH treatment. Replacement therapy has been facilitated with portable infusion pumps that may be programmed to deliver GnRH in a pulsatile pattern simulating endogenous release.

Fertility Promotion: The expectation that GnRH might represent an effective and safe profertility agent was not realized until the physiological significance of pulsatility became apparent. Since then, ovulation induction has been demonstrated using automatic portable pumps adjusted to infuse GnRH every 60 to 120 minutes. This approach has been especially gratifying for individuals with polycystic ovarian disease who did not respond to clomiphene.

In males, spermatogenesis has been successfully induced. GnRH given subcutaneously every 2 hours with portable infusion pumps produces pulsatile secretion of LH and FSH after a week of therapy in men with idiopathic hypogonadotropic hypogonadism. Normal testosterone levels are achieved and testicular enlargement, which is the earliest indication of puberty, becomes apparent after 4 weeks of treatment. Pubertal changes occur and are maintained for the duration of GnRH therapy.

Cryptorchidism: Undescended testicles have traditionally been treated surgically (orchidopexy) or with human chorionic gonadotropin (HCG). Although these approaches typically result in scrotal relocation of the testes, fertility is commonly compromised because of germ cell abnormalities.

The GnRH analog Buserelin has successfully induced testicular descent when given intranasally in doses of 200 micrograms 6 times daily over a 4-week period. During the treatment interval, LH levels increase progressively, but FSH rises and then declines. Interestingly, there may be a physiological advantage to the interaction between the gonadotropins and testes since those patients who received Buserelin have achieved normal counts of mature germ cells.

Contraception: As mentioned previously, continuous administration of GnRH, or long-acting agonists, results in pituitary desensitization and decreased pituitary gonadotropin secretion. Nasal inhalation of Buserelin and Nafarelin has produced anovulation; spermatogenesis, though, is incompletely suppressed. Undesirable side effects from the induction of a hypogonadal state have presented significant problems that include diminished libido, impotence, and bone mineral loss. Because of these problems, attention has recently focused on the use of GnRH agonists with supplemental testosterone. The use of GnRH antagonists to shorten the luteal phase has also been considered. A considerable amount of research will be necessary before GnRH analogs become practical contraceptive alternatives.

Endometriosis: Ectopically implanted endometrium onto the pelvic peritoneum has been responsible for disabling discomfort in many women. Oophorectomy and danazol have been used to suppress ovarian estrogen secretion and thus stimulation of the estrogen receptors in the aberrant endometrium. Recently, though, medical castration has been accomplished using daily 100 microgram doses of a GnRH agonist. During the first 2 weeks of therapy, variable increases in estradiol levels are observed presumably due to the response of developing follicles to FSH, which is initially released by the agonist. After 4 weeks of therapy, though, ovarian estrogens and androgens are reduced to castration levels.

Other Applications: GnRH and its analogs appear to have many other potential applications. Experimentally, these agents have been used for the treatment of acne, hirsutism, polycystic ovarian disease, and to protect the gonads during chemotherapy.

Diagnostically, GnRH offers a valuable tool for the evaluation of gonadotropic function in

persons with hypogonadotropic hypogonadism and tumors involving the hypothalamus or pituitary.

And finally, GnRH analogs represent powerful and specific research probes that will enhance our understanding of the basic regulatory processes underlying reproductive function. — P. MICHAEL CONN, PH.D., *Professor and Head, Department of Pharmacology and* JAMES R. HANSEN, M.D., *Postdoctoral Fellow, Pharmacology and Pediatric Endocrinology.*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

EFFECT OF STATE GOVERNMENT REORGANIZATION ON THE IOWA DEPARTMENT OF PUBLIC HEALTH

ONE OF THE MOST SIGNIFICANT pieces of legislation passed by the 1986 General Assembly is Senate File 2175 which reorganized Iowa state government. Virtually all state agencies were affected by the bill. Some agencies were consolidated or abolished, some were expanded, and some newly created.

The purpose of the legislation is to streamline the operation of state government. The executive branch was reduced from 68 to 24 agencies, a more reasonable number to manage. The Governor was provided with increased capacity to efficiently and effectively carry out the functions of that office. The legislative policymaking capability and oversight of programs will also be improved. The public's understanding of government programs and their relationships with administrative agencies will be enhanced as well. The reorganization bill calls for a more responsive state government, allowing for the careful appraisal of new and existing programs based upon changes in need.

The Iowa State Department of Health is now the "Iowa Department of Public Health." Merged with it is the former Iowa Department of Substance Abuse which administers programs and funds targeted for the prevention and treatment of alcohol and drug related problems. Ms. Mary L. Ellis, who has served as director of that agency since 1983, has been named Commissioner of the Iowa Department of Public Health. Ms. Ellis is a Registered Pharmacist, has a M.P.A. degree from Iowa State University and has partially completed a Ph.D. program at ISU. She is a former vice-chairperson of the State Board of Health.

The State Board of Health will be changed in composition from 9 members, all representing health disciplines, to include 4 members representing the general public as consumers. The Governor will appoint 1 consumer in 1987, 2 in 1988, and the final one in 1989.

Another significant change is the placement of the following "boards" within the health department: Medical Examiners, Pharmacy Examiners, Dental Examiners and the Board of Nursing. Each board, however, will retain its own policymaking and rulemaking authority.

One of the major responsibilities of the health department before reorganization was the inspection, certification and licensing of health facilities. That responsibility was transferred to the new Department of Inspections and Appeals along with the regulatory activities of several other state agencies. The health facilities division licenses and/or certifies — for Medicare and Medicaid participation — many types of facilities, including hospitals, nursing homes, facilities for the mentally retarded, residential facilities, home health, hospice, and other providers. Full licensing authority under the Code of Iowa will now be placed in the Department of Inspections and Appeals.

In addition to reorganizational changes, there are several program changes that affect the new Department of Public Health. Beginning October 1, the Department will administer a $1.1 million appropriation for obstetrical patient care. This program will enable financially eligible individuals to receive obstetrical

(Please turn to page 380)

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and newborn care from providers in or near their local community. Previously, these people received care from the University of Iowa Hospitals and Clinics in Iowa City. The program will not duplicate financial assistance or services already provided by Medicaid and/or existing maternal and child health programs. The Department's responsibility will include developing eligibility criteria, rules and procedures, processing billings from providers, and participating in studies of the program's operation during the next 2 years. The county general relief directors will be involved in the local administration of the program.

The Department has also been assigned responsibility for the Crippled Children's Program under Title V. The legislation provides for the Department to contract with the University of Iowa for the continuation of the Mobile and Regional Child Health Specialty Clinics.

Other changes include the transfer of the Deaf Services program from the health department to the new Department of Human Rights, and the elimination of the Advanced Emergency Medical Care Council. The Department of Public Health will have the responsibility for authorization of ambulance and rescue squad services operating at the Advanced EMT or Paramedic level. The Board of Medical Examiners will continue to have rulemaking authority for the examination and certification of advanced Emergency Medical Technicians and Paramedics.

OUR MAN IN EDUCATION

(Continued from page 371)

education, the editor will deny me future access to this space. So here comes the connection: goal-oriented purposes count, not idle reflection, it too often seems. Recall, Archimedes in his tub and Newton under his apple tree were each at the time working to solve some puzzle, although I submit that at the fabled moment of inspiration they each probably thought their minds were either blank or otherwise engaged. The mind can be *forced* to solve problems only up to a point. And that's why certain moments of rest ought to be worth at least double value in CME credit hours.

June 1986 Morbidity Report

Disease	June 1986 Total	1986 to Date	1985 to Date	Most June Cases Reported From These Counties
Aids	1	10	5	NA
Amebiosis	2	18	28	Floyd, Johnson
Brucellosis	0	1	1	—
Chickenpox	222	6612	5318	Scottered
Compylobocter	39	139	110	Scottered
Cytomegolovirus	1	12	3	Polk
Eotons Agent Infection	1	6	6	Polk
Encepholitis, virol	0	4	11	—
Erythemo Infectiosum	42	260	0	Scottered
Gostroenteritis (GIV)	347	11631	10055	Scottered
Giordiosis	17	151	174	Scottered
Hepotitis, A	2	26	24	Pottowottomie, Scott
Hepotitis, B	3	44	50	Block Hawk, Johnson, Woodbury
Hepotitis, Non A-B	3	14	10	Des Moines, Polk, Pottowottomie
Hepotitis type unspecified	0	0	5	—
Herpes Simplex	112	631	554	Scottered
Herpes Zoster	1	1	0	Linn
Histoplosmosis	3	14	11	Floyd, Morion, Monroe
Infectious mononucleosis	6	152	104	Block Hawk, Jones, Linn
Influenzo, lob confirmed	0	247	169	—
Influenzo-like illness (URI)	1066	71637	24937	Scottered
Legionellosis	1	6	3	Poweshiek
Molorio	0	1	1	—
Meningitis oseptic	6	17	11	Cloy, Dubuque, Polk, Scott, Webster
bocteriol	9	48	78	Scottered
meningococcol	1	10	7	Linn
Mumps	2	15	8	O'Brien, Polk
Pertussis	0	9	3	—
Robies in onimols	20	97	87	Scottered
Reye Syndrome	0	0	4	—
Rheumotic Fever	0	6	0	—
Rubello (Germon meosles)	1	1	1	Block Howk
Meosles	23	41	0	Johnson, Monono, Polk, Scott
Solmonellosis	15	68	111	Scottered
Shigellosis	0	4	9	—
Toxic Shock Syndrome	0	4	5	—
Tuberculosis totol ill	1	23	38	Scott
boct. pos.	1	20	37	Scott
Typhoid Fever	0	1	0	—
Venereal diseoses:				
Gonorrheo	317	1859	2111	Scottered
Chlomydio	207	1208	20	Scottered
Syphilis	1	6	14	Polk

Other Non-Reportoble Diseoses: Rotavirus — 1, Dubuque, 1, Linn; Ureoplosmo urealyticum — 1, Cedor, 1, Dubuque, 2, Johnson, 2, Linn.

QUESTIONS AND ANSWERS

(Continued from page 357)

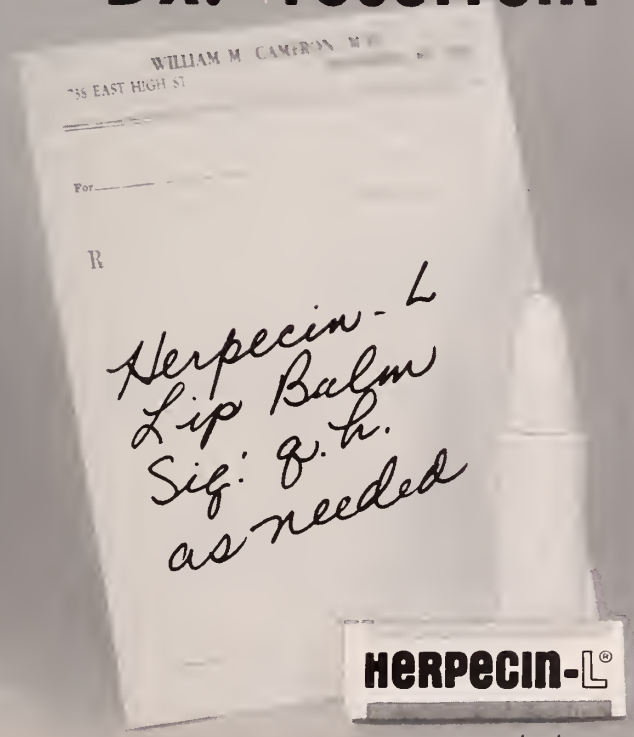
of any data which gives us specific numbers. I think the problem can be partly solved by strengthening the Assistance Program for Troubled Physicians and by educational efforts to increase physicians' understanding of laws governing the distribution of these drugs.

What can physicians do to help curtail diversion of prescription drugs?

Some relatively simple measures which could make a significant impact on the problem can be adopted by the physician. Among these are:

- Don't leave prescription pads lying around the office or examining rooms.
- Don't prescribe controlled drugs without examining the patient. Issuing a prescription pursuant to a telephone call or based on a third party's description of the patient's condition makes the physician an easy mark for diversion schemes.
- Adopt policies and procedures to assure records are kept on the issuance of all prescriptions and on requests for refills. Maintenance of these records will prevent misuse and abuse and may help to identify the "professional" patient.
- Be suspicious of any patient who demands a specific controlled substance or who produces records from an out-of-state practitioner to support their request for a narcotic or stimulant.
- Write prescriptions so the quantities or strength of the drug cannot be easily altered. Quantities should be written both alphabetically and numerically [e.g. thirty (30)]. Do not write quantities in Roman or Arabic numerals only.
- Don't carry large quantities of controlled substances and don't store office drugs where patients have easy access to them.

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RECENT BOOKS

Giscard d'Estaing, Valerie Anne, 1985, *The World Almanac Book of Inventions*, World Almanac Publications, New York, N.Y., $10.95. This almanac presents brief discussions on over 2,000 innovations ranging from the bizarre to amazing technologic advances in many facets of life — agriculture, science, medicine, art, and industry, to mention a few. This is a very interesting and informative collection of fact and trivia. It may serve as a reference work as well as interesting casual reading.

The Physician and the Hopelessly Ill Patient, 1985, Society for the Right To Die, 250 West 57th Street, New York, N. Y. 10107, Paperback, $5.00. This is an excellent informative resource for any professional involved in the legal, medical and ethical aspects of caring for the hopelessly ill patient. The first section discusses the physician responsibilities to this type of patient. Next, there is a question and answer section on the legal aspects of allowing to die. Last, there is a state-by-state summary

of living will legislation and case law. Every hospital should have copies of this publication for easy availability to physicians, nurses, and other patient care-givers.

Korneluk, Greg N., 1985, *Practice Enhancement: The Physician's Guide to Success in Private Practice*, Macmillan Publishing Co., New York, N. Y., $23.50. This book offers many practical ways to market a medical practice in a world of professional competition. Also, the many aspects of office management to enhance a successful practice are discussed. A "must" book for the young physician starting a practice.

Youniss, James, and Smollar, Jacqueline, 1985, *Adolescent Relations With Mothers, Fathers, and Friends*, University of Chicago Press, Chicago, Illinois, $25.00. The authors, after extensive interviews, provide considerable insight into the sociological and psychological mysteries of adolescents. Their relationships with peers as well as parents are examined in depth.

Fuller, Wayne E., 1985, *The Old Country School*, University of Chicago Press, Chicago, Illinois, paper, $1.95. This research story of rural education in the middle west is a bit of social history as well. It is obvious the author did much research in his study of a most interesting facet of education from the mid-nineteenth to the early twentieth century.

Greenstein, Jack, 1986, *What The Children Taught Me*, The University of Chicago Press, Chicago, Illinois, $15. A series of informative and interesting stories related by a teacher in Chicago schools. Twenty-three years of coping with children under various conditions provided many experiences.

Meichenbaum, Donald, 1985, *Coping with Stress, Facts on File Publications*, New York, N.Y. $13.95. Life is stress. This small book presents an analysis of stress and methods of coping with the effects of stress. The discussions are concise and informative. The cartoons by Mel Calman add a note of meaningful humor.



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ABOUT IOWA PHYSICIANS

Dr. William Bender began family practice in Holstein in May. Dr. Bender received the M.D. degree at the University of Wisconsin and interned at St. Luke's-Mercy Hospital in Cedar Rapids. Prior to locating in Holstein, Dr. Bender practiced emergency medicine in Verona, Wisconsin. . . . **Dr. John F. Murphy,** Boone, has been appointed assistant clinical professor of family medicine at the U. of I. College of Medicine. Dr. Murphy has served on the College of Medicine faculty for several years and in 1985 was named educator of the year by the Iowa Academy of Family Physicians. He has been practicing family medicine in Boone since 1969 and will continue his private practice. . . . **Dr. Stephen Gruba** and **Dr. Bethel Kopp** have joined the staff at the Rosary Medical Center in Corning. Both received their M.D. degrees at Creighton University School of Medicine in Omaha, Nebraska, where Dr. Gruba served a family practice residency and Dr. Kopp a residency in internal medicine. Prior to locating in Corning, the couple provided medical care in the Appalachian Mountain area. . . . **Dr. Kenneth J. Gee,** Shenandoah, retired from medical practice in May. Dr. Gee received the M.D. degree at the U. of I. College of Medicine. He had practiced

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medicine in Shenandoah for almost 40 years. . . . **Dr. William G. Halverson,** New Hampton, has been named to fill vacancy on New Hampton City Council. . . . **Dr. James R. Laferriere** has joined the Fort Dodge Medical Center. Dr. Laferriere received the M.D. degree at the University of Massachusetts Medical School and served his pediatric residency at the Mayo Clinic in Rochester, Minnesota. . . . **Dr. George L. Baker,** former associate dean in the Department of Pediatrics at the U. of I. College of Medicine, has been named vice president and medical director of the Mead Johnson Nutritional Division. . . . **Dr. Robert A. Sautter,** Mt. Vernon, has retired from medical practice. Dr. Sautter received the M.D. degree at the U. of I. College of Medicine. He began medical practice in Mt. Vernon in 1952. . . . **Dr. Roger I. Ceilley,** Des Moines, was a program participant at the annual meeting of the Maryland Academy of Family Physicians in Ocean City, Maryland. Dr. Ceilley spoke on "Advances in Dermatology for the Elderly," and "Dermatologic Manifestations of Systemic Disease."

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A Monthly Commentary

IN THE PUBLIC INTEREST

IMS Quarterbacks A Team Effort

THE FINAL REPORT of the Prescription Abuse Data Synthesis (PADS) project is the culmination of a team effort by various organizational entities which, at the outset, may have been just a little wary of one another. It became a project in which the Iowa Medical Society is proud to have played a leading role.

"At first, I think everyone was a little conscious of protecting their own turf," comments James F. Stiles, M.D., Cedar Rapids, chairman of the IMS Committee on Alcoholism and Drug Abuse and a PADS participant. "Then, a realization developed that we were all there for one purpose — to identify problems and find ways to cope with them."

The PADS project is the brainchild of the American Medical Association. Designed to gauge the seriousness of a state's prescription drug diversion problem, the PADS process has been completed in 21 states, including Iowa. When approached by the AMA to initiate PADS, the IMS responded affirmatively and enlisted the Governor's office as a sponsor.

"We can't thank the Governor's office enough for its role in this project," stresses Dr. Stiles. "The AMA also deserves a pat on the back for taking the lead and providing vital financial and technical assistance."

The project commenced when the IMS invited representatives of 19 state agencies and professional associations to attend the first PADS meeting.

PADS participants then began the process of gathering data on prescription drug usage patterns in specified areas of Iowa, analyzing these patterns and targeting certain drugs for further analysis and investigation. Dr. Stiles was the IMS physician liaison to the PADS group. He met regularly with the IMS Committee on Alcoholism and Drug Abuse, keeping committee members apprised of the progress of the PADS project and seeking their guidance.

"Physicians had quite a bit of input, especially during the data-gathering stage of the project," relates Dr. Stiles. "We were able to apprise the PADS group of potential problem areas in the raw data and offer explanations for certain prescription drug usage patterns."

The IMS Committee on Alcoholism and Drug Abuse played another, equally important role.

"We had to let the regulatory agencies know that we support them and the work they do," he says.

Although the PADS group has completed its final report and its recommendations for strengthening Iowa's system for dealing with prescription drug diversion, Dr. Stiles emphasized the group's work has not ended.

In fact, the PADS group has its most important work ahead — deciding how to implement the recommendations formulated after over a year of research. The IMS will play a key role in this phase of the project, also.

"All this data will be made available to the IMS Committee on Assistance Program For Troubled Physicians," Dr. Stiles explains. "In addition, we plan to focus on educating Iowa physicians about how drug scams work and how to prevent them."

Dr. Stiles rates the PADS project a success and praises all the organizations contributing their time and expertise.

"The State of Iowa was the real winner," he concludes.

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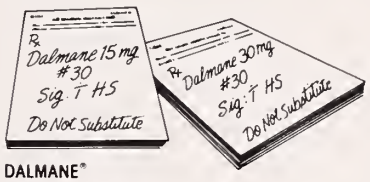
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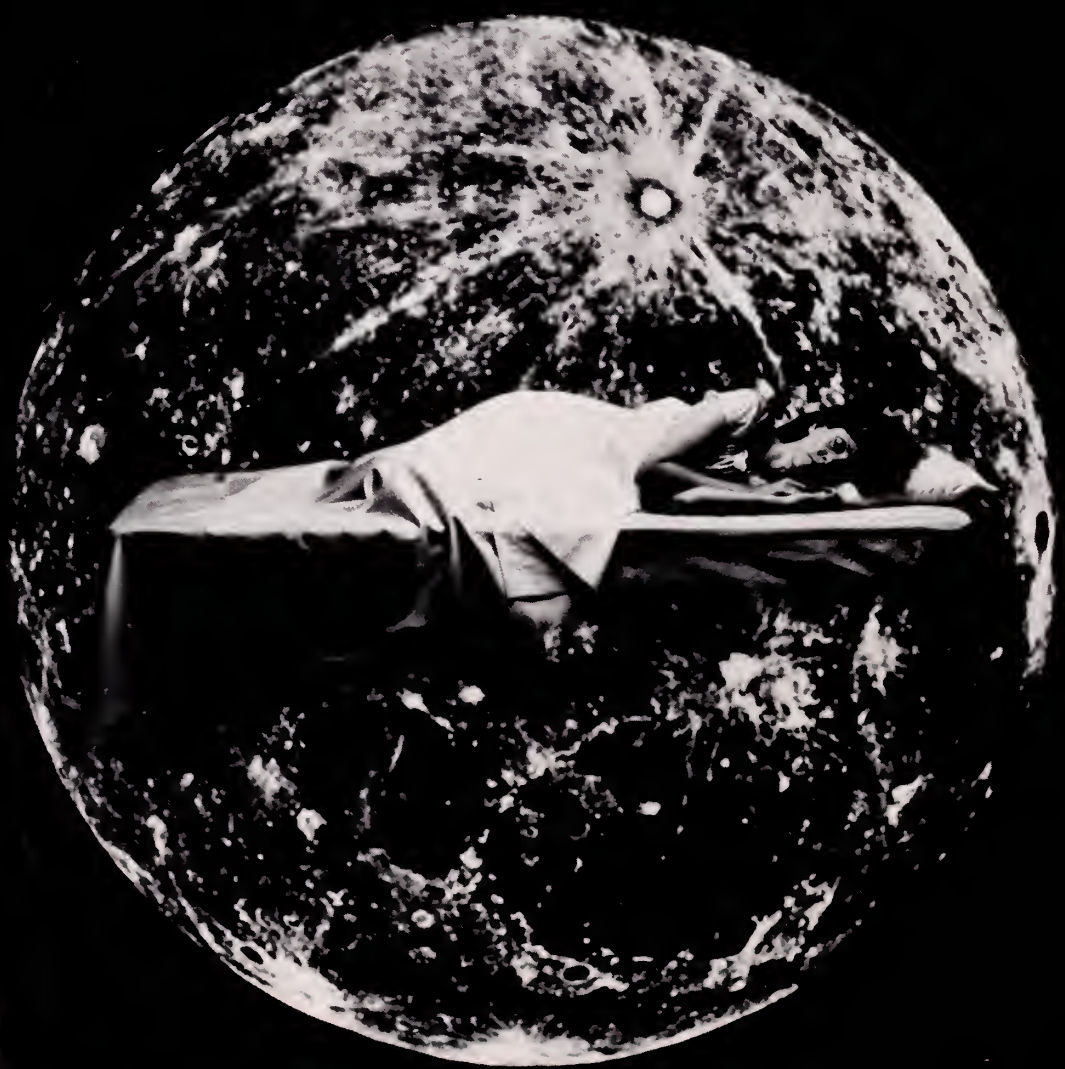
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September 1986

IowaMedicine

Volume 76 Number 9

Journal of the Iowa Medical Society

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ABOUT THE COVER



ABOUT THE COVER — The healthy mother and baby pictured on our cover are Wilma M. Gajdel and her daughter, 9-month-old Anna Aleksandra Gajdel of Des Moines. This month's IOWA MEDICINE focuses on healthy mothers and healthy babies, with articles on prenatal care, genetics, nutrition and the nationwide "Healthy Mothers, Healthy Babies" coalition. Photo by David F. Penney Photography.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-8709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: $15 per year. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

NATIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 South Blvd., Oak Park, Ill. 60302. Phone 312/383-8800

IOWA ADVERTISING: Contact Mrs. Polly Lynch, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265. Phone 515/223-1401

EDITORIAL CONTENT: The work of various authors is found in the diversified content of IOWA MEDICINE. The Society respects these individual efforts but is unable to assume responsibility for the accuracy of that which is submitted. Manuscripts and editorial inquiries should be directed to Editor, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265

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CANCER UPDATE

OCTOBER 15, 1986

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TOPICS:

"MANAGEMENT OF BONE METASTASES"

"ADJUVANT THERAPY FOR CANCER OF THE BREAST"

"CONTROLLING INFECTION IN THE CHEMOTHERAPY PATIENT"

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PRESIDENT'S PRIVILEGE



IMS Events

MEMBERSHIP IN THE Iowa Medical Society has many benefits, but none more valuable than the various activities filling the IMS schedule of events each year. The 1986-87 activity agenda is no exception to this rule.

In the coming months, physicians will have many opportunities to explore pertinent medical topics and become involved in the business of the Society. Several of these deserve special mention.

An excellent series of ongoing and special events began this month with the September 8-11 Risk Management Seminars, a new addition to the IMS schedule. In October, the IMS will cooperate in 2 more new events — the October 2 Health Fraud Conference and the October 23 Health Issues Conference.

"Communications" — the focus issue of my presidency — will be the theme for the October 15 IMS/IMS Auxiliary Joint Leadership Conference in Amana. The program will explore medicine's communication with others. The 1987 Annual Meeting and Scientific Session will round out the year. Plans are underway for Scientific Session programs which will provide CME credits and risk management education credits for IPMIT insureds.

In addition to these and other special activities, there will be more than a hundred committee meetings where the bulk of IMS business is accomplished. The many physicians who contribute to these ongoing tasks deserve a pat on the back.

As we begin a new activity year, consider the potential benefit of becoming involved in the organization that represents you. You have a lot to offer and a lot to gain.

L. D. Caraway, M.D.

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Advanced Diagnostic Medicine For Better Health Care

Iowa Healthy Mothers, Healthy Babies Coalition

HERMAN A. HEIN, M.D.
ELIZABETH THOMSON, R.N., M.S.
Iowa City, Iowa
JOYCE BORGMEYER
Des Moines, Iowa

The National Healthy Mothers, Healthy Babies Coalition is an association of organizations with a common interest in maternal and child health. This article explains the overall goals of the coalition. It also outlines activities of the Iowa Healthy Mothers, Healthy Babies Coalition. The authors are tri-chairs of the Iowa coalition.

TODAY, WE UNDERSTAND considerably more about the health problems of infants than we did a generation ago. We also know more about things parents can do prior to the onset of pregnancy to give their babies the best possible start in life. Unfortunately this knowledge tends to be primarily available to health-care professionals rather than to prospective parents.

The National Healthy Mothers, Healthy Babies Coalition is an association of over 70 professional, voluntary and governmental organizations with a common interest in maternal and child health. It includes organizations such as the American Academy of Family Physicians, the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists. It was developed to foster the dissemination of public information promoting improved health for mothers and babies. Its goals are:

- Promote public awareness and education in preventive health habits for pregnant women and their families.
- Develop information networks among groups concerned about improving health of mothers and babies.
- Distribute public education materials on topics related to improving maternal and child health.
- Assist in the development of state healthy mothers, healthy babies coalitions.

The Iowa Healthy Mothers, Healthy Babies Coalition began organizational activities approximately one and a half years ago. Today, the Iowa Coalition has over 30 member organizations. Representatives from the private and public health care sector, voluntary organizations, educational representatives and the

Dr. Hein is a professor in the Department of Pediatrics at the U. of I. College of Medicine. He also directs the Iowa Statewide Perinatal Care Program. Elizabeth Thomson is clinical coordinator for the Regional Genetic Consultation Service at the U. of I. Joyce Borgmeyer is program administrator for the Maternal and Child Health Section, Iowa Department of Public Health in Des Moines.

general public are members of the Coalition.

Members of the Iowa Coalition have already begun development of educational materials designed to improve maternal and infant health in this state. These materials are designed or screened to meet the needs of the Iowa audience. Our first public service message was televised on Mother's Day, 1986. It encouraged pregnant women to eat well, get plenty of rest and exercise, seek early prenatal care and avoid alcohol, cigarettes and other drugs or medications not prescribed by their physician. Extensive written materials are being developed to be distributed in the near future.

The challenge of the Iowa Healthy Mothers, Healthy Babies Coalition is to develop convincing educational messages. This is no small task. The information is available; delivering it to potential parents who may not be receptive is the real challenge.

We believe Iowa's youth must learn the importance of a healthy lifestyle, especially during their reproductive years. Accordingly, the Coalition hopes to work with educators to develop materials that will be incorporated into school curricula beginning at the elementary level. In addition, we plan to continue offering public education via television, radio and written communications.

We are pleased that the editors of IOWA MEDICINE have given us the opportunity to acquaint Iowa physicians with the Iowa Healthy Mothers, Healthy Babies Coalition. Included in this issue are 3 articles about factors which may have a direct bearing on pregnancy outcome. One article acquaints Iowa physicians with young people's habits and general lifestyles that may affect the health of their children. Other articles explore the current state of the art of prenatal care and prevention strategies that can be utilized with the reproducing couple.

We hope you enjoy this issue of IOWA MEDICINE and seek your support for the Iowa Healthy Mothers, Healthy Babies Coalition. Because of your efforts, Iowa has become a very good place to be born. We hope to continue to work together to make it even better.

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Prenatal Care in 1986

BARBARA A. BEATTY, M.D.
Des Moines, Iowa
and
MICHAEL W. VARNER, M.D.
Iowa City, Iowa

Good prenatal care is vital for optimizing the likelihood a pregnancy will result in both a healthy mother and a healthy baby. Although many basic clinical features of good prenatal care have not changed significantly, the past decade has seen a significant expansion in the spectrum of comprehensive antenatal care. This article reviews current recommendations for prenatal care in Iowa.

IDEALLY, GOOD PRENATAL CARE is a continuation of physician supervised health care established prior to conception. As a result of such care, any chronic diseases or congenital anomalies are likely to have been recognized and appropriate steps taken to minimize or eliminate their adverse effects during a pregnancy. Preconception counseling can be used to educate high-risk patients about the morbidity and/or mortality associated with pregnancy, as well as any alterations in medical management which might be required during gestation.

Perhaps the best example of the usefulness of preconception counseling is patients with insulin dependent diabetes mellitus. In this condition, perinatal morbidity and mortality are increased, but can be diminished by maintaining maternal blood sugar control within non-diabetic blood sugar ranges. Periconceptual blood sugar control in such patients is associated with a significant reduction in the incidence of congenital anomalies. Diseases other than diabetes should also prompt preconception counseling. Representative diseases include severe hypertension (140/100 or greater), renal disease, isoimmunization and other hematologic disorders, cardiovascular disorders (symptomatic heart disease, stenotic valvular disease, or aortic coaraction, myocardial dysfunction, actual or potential right to left shunting), thyroid disease, inflammatory bowel disease, autoimmune diseases (eg. — lupus), and seizure disorders.

Optimally women should have a rubella antibody titer screening prior to undertaking a pregnancy. This can be carried out at the time of their initial visit, annual gynecologic evaluation or family planning visit. If a woman is found not to be immune to rubella, an immunization can be given prior to conception. A woman who is given the rubella immunization should be encouraged to refrain from undertaking pregnancy until 2 to 3 months

Dr. Beatty is associated with the Department of Obstetrics and Gynecology at Iowa Methodist Medical Center in Des Moines. Dr. Varner is an associate professor in the Department of Obstetrics and Gynecology at the University of Iowa College of Medicine.

after the immunization even though the immunization has not been clearly shown to be teratogenic.

Pre-pregnancy care also includes promotion of a preconceptual healthy life style. Women planning for pregnancy should be particularly encouraged to stop smoking and alcohol/drug abuse, as all of these unfavorably effect pregnancy outcome. In cases of possible pregnancy, any medication usage should be checked with a physician to rule out adverse effects. Specific teratogenic drugs must be avoided during pregnancy. These include (but, are not limited to) coumadin, diethylstilbesterol, lithium, dilantin, Accutane, streptomycin, tetracycline, thalidomide, and valproic acid (Depakene).

Prenatal Care

Once a woman realizes she is pregnant, she should register for prenatal care. Major goals of such prenatal care are: (1) establishment of an accurate estimated date of confinement (EDC), or due date, (2) identification of preexisting medical problems and/or risk factors, with appropriate modification of prenatal care, (3) collection of an initial comprehensive data base, and (4) appropriate documentation of antepartum "landmarks" i.e., appropriate increases in weight and fundal height and expansion of maternal blood volume.

Establishing an accurate EDC is one of the most important aspects of prenatal care. The first day of the last normal menses is often used to calculate the EDC using Naegele's rule (add 7 days and subtract 3 months from the first day of the last menstrual period). However, if cycles are irregular or if the LMP was a "pill period" (oral contraceptive withdrawal bleeding), an EDC calculated by Naegele's rule may have little meaning. In such cases, as well as any pregnancy in which the EDC is unclear, an early ultrasound examination is useful.

Once an EDC has been established, the usual dating "landmarks" should appear at appropriate points — positive serum HCG by the time of a missed menses, positive urine HCG 10 days after a missed menses, positive fetal cardiac activity by Doppler ultrasound at 12-14 weeks, quickening at 16-20 weeks, and positive fetal cardiac activity by fetoscope at 19-21 weeks. Uterine growth should also be appropriate, with the uterus filling the pelvis at 12 weeks, reaching the umbilicus at 20 weeks, and then continuing to increase in size thereafter with the fundal height in centimeters correlating with gestational age from 18-32 weeks.

Identification of preexisting medical problems and/or risk factors should ideally occur prior to conception, but will also occur at the initial prenatal visit. Periodic reevaluation is required throughout pregnancy. Goals of the risk assessment are: 1) to identify high-risk pregnancies (30% of pregnant patients account for 70% of abnormal pregnancy outcomes) and 2) to help formulate management plans for these patients. Many authors have composed tables for risk factor assessment. Tables I and II outline obstetric risk factors to be assessed at the first visit and at 32 weeks gestation.

Regardless of the system used for risk assignment, the conclusion is the same — a high-risk patient requires special care, usually best provided by an obstetrician, often in conjunction with other medical specialists and subspecialists.

Besides risk assessment, an initial prenatal visit includes collection of an extensive data base. A comprehensive history (including menstrual history and a detailed previous obstetrical history) is obtained and a complete physical examination is performed. Uterine size (and cervical dilatation, if any) is determined, and clinical pelvimetry is assessed. Initial laboratory testing generally includes the following:

- Complete blood count
- Blood group and Rh determination (unless documented on at least two prior occasions)
- Antibody screen (all patients, regardless of Rh type)
- Rubella antibody titer (if not done prior to pregnancy)
- Syphilis screen
- Urinalysis
- Cervical cytology (unless Class I smear with the past six months)

At any antepartum visit, additional laboratory testing may be indicated based on history or examination findings. Such tests may include urine culture, testing for hemoglobin S, renal function studies, blood glucose determinations, tuberculosis skin testing, cervical cultures for *Neisseria gonorrheae* or *Chlamydia trachomatis*, or determination of serum levels

(Please turn to page 403)

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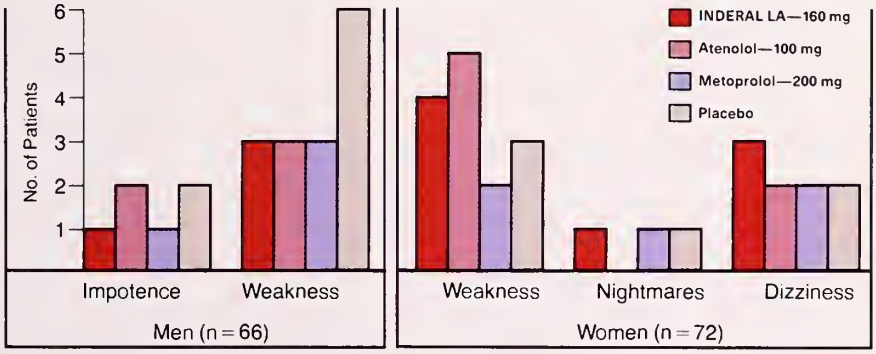
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Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)— PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS. Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular. Bradycardia, congestive heart failure; intensification of AV block, hypotension, paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System. Lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to catatonia, visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss, emotional lability; slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal. Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic. Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory. Bronchospasm.

Hematologic. Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous. Alopecia, LE-like reactions, psoriasiform rashes; dry eyes, male impotence; and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System. Dizziness, vertigo; paresthesias; headache; xanthopsia.

Hematologic. Leukopenia, agranulocytosis, thrombocytopenia; aplastic anemia.

Cardiovascular. Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura, photosensitivity; rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis); fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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REFERENCE:

1. Ravid M, Lang R, Jutrin I. The relative antihypertensive potency of propranolol, oxprenolol, atenolol, and metoprolol given once daily. *Arch Intern Med* 1985;145:1321–1323.

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of certain drugs (i.e., anticonvulsants, Theophylline).

Patient education with regard to healthy pregnancy lifestyle also plays a very important role in the initial prenatal visit, as well as throughout pregnancy. Pregnant women should be particularly advised to stop smoking and to avoid use of alcohol or other drugs. Pregnancy nutrition guidelines should be reviewed, including the increased need for calories, protein and calcium. Patients should realize that a pregnant woman consuming a well-balanced diet probably needs only supplemental iron and folic acid.

Once the initial prenatal assessment has been made, the frequency of return visits is determined by a woman's individual needs and risk factors. In an uncomplicated pregnancy, a woman is seen every 4 weeks for the first 28 weeks of pregnancy, every 2-3 weeks until 36 weeks gestation, and weekly therafter. Woman with active medical or obstetrical problems should be seen more frequently, with intervals determined by the nature and severity of the problems.

Follow-up visits should carefully monitor weight gain and fundal growth. Appropriate weight gain for pregnancy should total 22-27 pounds, with most weight gain occurring in the second and third trimester. Fundal height should increase one centimeter per week between 18-32 weeks, then somewhat more slowly after this. Plasma volume should expand in the second trimester, as reflected by a modest decrease in hematocrit.

Appropriate care also includes follow-up laboratory testing at specific times during the pregnancy. Hemoglobin and hematocrit values are generally obtained during the second and third trimesters. In addition, an antibody screen is repeated at 28 weeks. If this is negative, Rh negative women (who may have an Rh positive fetus) then receive Rh immune globulin (RhoGAM) as antepartum prophylaxis. Glucose screening is also performed between 26-28 weeks gestation in all pregnant women. This contrasts with the past tradition of limiting glucose screening to women age 30 or older, or those with certain risk factors such as prior large infants or positive family histories. The screening consists of a 50 gram oral glucose load followed by a blood glucose determination one hour later. If the screening results are abnormal (greater than 140 mg%), a 3-hour 100 gram oral glucose tolerance test is then performed.

Newer Aspects of Prenatal Care

Maternal Serum Alpha-Fetoprotein Screening

A recent addition to antepartum care is maternal serum alpha-fetoprotein (MSAFP) screening, designed initially to detect fetal neural tube defects (NTD's). In Iowa, the prev-

(Please turn to page 404)

TABLE I

OBSTETRIC RISK FACTORS TO ASSESS AT FIRST VISIT

Demographic
1. Race: Non white
2. Marital Status: Single
3. Age: <18, >35
4. Low socioeconomic, educational class

Past obstetrical history
1. Para 5 or more
2. Previous cesarean section
3. Previous perinatal death
4. Previous baby w/congenital anomaly
5. Previous child w/mental retardation or epilepsy
6. Previous abnormal presentation at delivery
7. Previous toxemia
8. Habitual aborter
9. Previous third trimester or postpartum bleeding
10. Previous low birth weight infant
11. Previous excessive size infant
12. Blood group isoimmunization
13. History of uterine anomaly or midtrimester abortion
14. Previous delivery at <37 or >42 weeks

Medical Factors
1. Hypertension
2. Cardiac disease
3. Endocrine imbalance or history thereof
4. Renal disease, including previous urinary tract infections
5. History of phlebitis
6. History of coagulation disorder
7. Chronic pulmonary or GI disease
8. Epilepsy
9. Anemia
10. Other significant chronic illness or condition

Other
1. Small pelvis on exam
2. Glucosuria
3. Proteinuria
4. Drug or alcohol abuse
5. Weight: <100 or >200 pounds
6. Late registration for antenatal care
7. Religion — Jehovah's Witness (refusing blood products)
8. History of DES exposure
9. Unwanted pregnancy
10. Pregnancy without family support
11. Cigarette smoker (≥1 ppd)
12. Abnormal maternal serum alpha-fetoprotein

TABLE II

OBSTETRICAL RISK FACTORS TO ASSESS AT 32 WEEKS GESTATION

1. Weight goin 14 pounds or less
2. Proteinuria; bocteriuria; glucasurio
3. Anemio (hematacrit <30)
4. Isaimmunizotion
5. Abnarmol uterine size (twins, hydramnios, IUGR)
6. Significont bleeding after 12 weeks
7. Incipient or eorly preeclompsio
8. Few prenotol visits
9. Cervical dilatotion
10. Venerol disease

alence of NTD's is approximately 1 per 1,000 births with 90-95% of these occurring in the absence of a previous family history. NTD's consist primarily of anencephaly or open or closed lumbosacral spinal lesions (spina bifida). A MSAFP screening program can detect approximately 85% of all neural tube defects, although 15% of NTD's will go undetected even after MSAFP screening.

A blood sample is obtained between 15-18 weeks of pregnancy. If elevated, the sample is repeated and an ultrasound examination performed. If both the second blood sample and the ultrasound are normal, no further testing is needed. If both blood samples are elevated, and the ultrasound does not provide an explanation, an amniocentesis is indicated.

It is important to remember that other conditions may cause elevated MSAFP values. These include multiple pregnancy, dating errors, fetal death, fetal abdominal wall defects (omphalocele or gastroschisis), fetal upper GI obstructions and congenital nephroses. In spite of this, only one of 25 women with elevated MSAFP's will have a baby with a NTD. The other 24, however, are at increased risk for other obstetric complications, such as premature labor, stillbirth, abruption and small-for-gestational age babies. Thus, a woman with an elevated MSAFP but normal amniotic fluid AFP is at subsequent increased risk for multiple obstetric complications and her pregnancy must be considered a high-risk pregnancy.

In addition, recent literature strongly suggests a low level of MSAFP indicates a pregnancy at increased risk for chromosome abnormalities. Currently, amniocentesis is recommended if the combined risk of maternal age and low MSAFP (usually ≤ 0.4 multiples of the median) equals or exceeds the risk of a 35-year-old woman to have a child with a chromosome anomaly.

Prenatal Diagnosis

Antenatal screening for the diagnosis of genetic disorder is also an important part of modern prenatal care. Couples at increased risk for producing abnormal offspring should be offered prenatal diagnostic studies either by amniocentesis, chorionic villus sampling (CVS) or ultrasound. Indications for these studies include advanced maternal age (age 35 or older at the expected time of delivery), prior child (children) with chromosomal anomalies or NTD's, known chromosomal abnormality in either parent (especially a translocation), a family history of X-linked disease or an inborn error of metabolism.

Amniocentesis has been widely used for prenatal diagnosis for over 15 years. It is performed at 15-16 weeks gestation and involves removal of fluid from the amniotic sac under ultrasound guidance. Amniocentesis is a reliable and accurate procedure. Its safety is also well-documented with a 0.2-0.5% risk of subsequent pregnancy loss.

More recently, CVS has come into limited use for prenatal diagnostic studies. It is usually performed at 9-10 weeks gestation. Under ultrasound guidance, a thin plastic catheter is guided through the cervix and into the area of the chorion frondosum. Villous material is then aspirated and cultured. The culture results are available within several days of the procedure, allowing diagnosis of genetic disease during the first trimester of pregnancy. Although initial studies of CVS are promising, several questions remain unanswered. More data must be collected before assuming CVS has the same diagnostic accuracy as amniocentesis. In addition, the pregnancy loss rate associated with CVS must be clearly established. Current estimates range from 1-7%, and thus exceed the loss rate associated with amniocentesis.

Ultrasound

Ultrasound has played an increasingly valuable role in prenatal care over the past two decades. Although it has been used for several purposes, its broadest application continues to be determination of gestational age. Between

8-14 weeks, crown rump length (CRL) is the most accurate technique for assigning gestational age (± 3-4 days). There is a transition in the reliability of CRL and biparietal (BPD) or femur length (FL) are quite accurate for determination of gestational age (± 7-10 days). However, later in pregnancy the biological variation of BPD and femur length increases sufficiently that ultrasound becomes progressively less precise for determination of gestation age. Gestational age assignment by ultrasound should be done only with caution if the initial scan is performed after 26-28 weeks.

Pregnant women in whom early ultrasound should be considered include those with irregular menses, "pill period" LMP's, size/dates discrepancies, late appearance of fetal movement or fetal heart sounds, possible repeat cesarean sections, or histories of fetal abnormalities visible by ultrasound.

Antepartum Fetal Surveillance

Electronic fetal heart rate monitoring has become a progressively important aspect of antepartum care over the past 15 years. Its utilization is based on the assumptions that 1) a healthy fetus will display certain reassuring heart rate patterns and 2) a compromised fetus will demonstrate other specific abnormalities. In the third trimester, a healthy fetus has a characteristic *baseline* heart rate of 110-150 beats per minute (bpm), with an average heart rate of 130-135 bpm. Good short term and long term beat-to-beat variability should be seen. Accelerations (responses of the fetal heart rate to fetal movement) should also be seen on a regular basis. Potentially ominous heart rate decelerations (variable decelerations, late decelerations) should not be seen with any regularity in a healthy baby.

(Please turn to page 406)



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Two primary forms of antepartum fetal heart rate surveillance have thus evolved. The nonstress test (NST) is based on the supposition that a healthy fetus not only moves, but will accelerate its heart rate at least 15-20 bpm above the normal baseline. Three such accelerations in a 20 minute "window" in the absence of ominous changes is a 99% assurance a fetus has sufficient placental respiratory reserve to safely remain in utero for another week.

The contraction stress test (CST) is based on the assumption that a compromised fetus will have recurrent late decelerations in response to contractions. These contractions may be either spontaneous or induced with intravenous oxytocin or nipple stimulation. A positive contraction stress test is defined when more than 50% of contractions are associated with late decelerations, irrespective of contraction frequency. A negative CST is defined by the absence of late decelerations and a contraction frequency of at least 3 in 10 minutes. Although a contraction stress test is more time and labor intensive to perform, it is also associated with a lower false negative rate (i.e., a potentially compromised fetus will be detected earlier by a CST than by NST).

A recent addition to antepartum fetal surveillance is the fetal biophysical profile (FBP). Besides employing a non-stress test, it also employs 4 other fetal biophysical parameters assessed by real-time ultrasound. These parameters include fetal breathing movements, fetal trunk movement, fetal extremity flexion and extension and amniotic fluid volume. Besides offering potential detection of fetal compromise, the FBP does offer the potential advantage of identifying fetal anomalies. As with the CST, however, the FBP requires a substantial time investment. It also involves more equipment and expertise.

At least one study has suggested that the FBP may be superior to the NST alone in assessment of antepartum fetal well-being. At this point, however, no studies have compared the FBP and the CST. Such studies are urgently needed.

The NST is a reasonable screen for antepartum patients with modest increased risk factors. However, for patients of extremely high risk for uteroplacental insufficiency, the CST or FBP may be more appropriate.

It is also important to emphasize that even if antepartum fetal surveillance is normal, an optimum outcome cannot be guaranteed. Such testing cannot predict other obstetric contributors to suboptimum outcome such as abruption or cord accidents. Likewise, a patient who has had normal antepartum surveillance should still receive electronic fetal heart rate monitoring during labor and delivery.

Conclusions

Optimum prenatal care should combine clinical fundamentals with recent technical innovations. It begins prior to conception, with risk assessment and promotion of a healthy life-style. It should continue throughout pregnancy with data collection, ongoing risk assessment and careful observation. Ultimately, optimum prenatal care should result in delivery of healthy babies without impairment of maternal well-being. Given the "tools" available today, this goal should be closer than ever before.

References noted in this article are available either from the author or the editors of IOWA MEDICINE.

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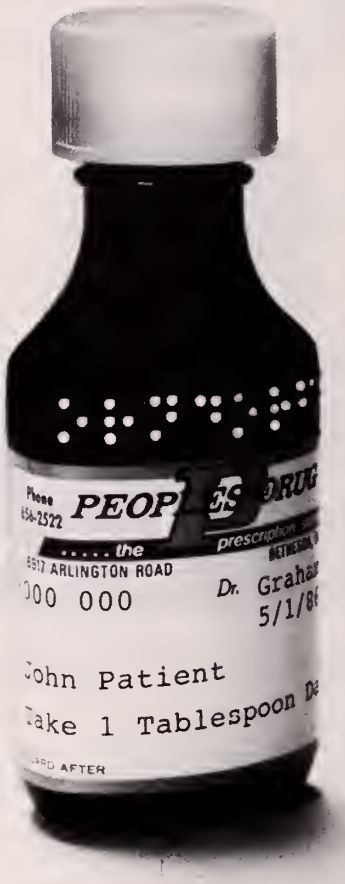
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Identifying Genetic Risks

JEFFREY C. MURRAY, M.D.
Iowa City, Iowa

A healthy baby is the end result Iowa doctors desire for all pregnancies. Techniques for identifying genetic risks are becoming increasingly sophisticated. Here, Jeffrey C. Murray, M.D. discusses various genetic risk factors and their implications for physicians and reproducing couples.

APPROXIMATELY 3% OF TERM NEWBORNS have a genetic or non-genetic birth defect. Defects include chromosome abnormalities (0.5%), single gene defects (1%) and multifactorial, sporadic or environmentally induced abnormalities (1.5%). Many of these disorders cannot be identified or predicted prior to birth, but others can be anticipated. Health care professionals and families should be aware of genetic health issues affecting newborns. Risk avoidance and preparedness for anticipated problems will enhance the chance families will have healthy children.

Identification of Risk by History

Family history

Thorough family history is essential in identifying genetic risks. Screening questionnaires may be used at the initial prenatal visit or first newborn check. Direct inquiries about relatives including grandparents and first cousins should be included. Specific inquiries are noted in Table I. The family history will also include information on miscarriages, stillbirths, neonatal deaths and pregnancy terminations for fetal abnormalities. More than 2 spontaneous abortions, or a stillborn or newborn with unexplained malformations are associated with an increased chance of a balanced chromosome rearrangement in a parent. Such balanced carriers will have no related health problems and may have normal children. Nonetheless, individuals who carry a chromosome translocation have an increased risk for fetal losses and newborns with multiple developmental and physical abnormalities. Such rearrangements often go undetected for several generations. Family members may share an unsuspected but common genetic risk. Current estimates suggest as many as 1 in 500 to 1000 people carry a balanced chromosome rearrangement. Couples with a history of recurrent fetal wastage have a substantially higher risk. Identification of a chromosome rearrangement carrier will allow optimal family planning which could include prenatal diagnosis through chorionic villi sampling or amniocentesis, artificial insemination, adoption and pre-delivery planning for an affected child.

Ethnic background

Ethnic background is an important consideration in reproductive risks. Blacks have a higher rate of sickle cell disease and G6PD deficiency. Asians have a higher incidence of al-

Dr. Murray is an assistant professor of pediatrics, Division of Medical Genetics, University of Iowa Hospitals and Clinics.

TABLE I

SPECIFIC DISORDERS TO ASSESS ON GENETIC HISTORY

1. Dawn Syndrame ar other chromasome abnormality
2. Newbarns or stillborns with birth defects
3. Hobitual spontoneous abartians
4. Mental retardation or leorning disabilities
5. Hydrocephalus, spino bifida ar anencepholy
6. Cleft lip or palate
7. Blue babies or congenital heart diseose
8. Known genetic disorders such as hemophilio, cystic fibrasis ar muscular dystrophy
9. Other inherited or fomilial canditians

pha and beta thalassemia. Ashkenazi Jews have a 10-fold greater frequency for being Tay-Sachs carriers and Northern Europeans have the highest rates of cystic fibrosis. Except for cystic fibrosis, carrier testing and prenatal diagnosis are possible for these disorders.

Age

Increased maternal and paternal age is associated with genetic risks. Women over age 35 at delivery have a significantly increased risk of having children with chromosome abnormalities, particularly for aneuploidy or an abnormal number of chromosomes as found in Trisomy 21 or Down Syndrome. Risks associated with advanced paternal age are less well defined, but have been reported to include an increased rate of several dominant genetic disorders including achondroplasia and some types of craniosynostosis.

Consanguinity

Consanguinity (offspring born to related individuals) increases the risk for genetic disorders, specifically autosomal recessive conditions. First cousins with no family history of genetic disorders have about a 2-fold increased incidence of inherited abnormalities; their risk is about 6% to 8% for a child with a birth defect. Second cousins and more distant relatives have only a slight increase in risks unless a specific genetic condition is present in the family. If a genetic disorder is present, consultation with a geneticist may help clarify risks and testing possibilities. An example is marriage between first cousins where one has a sibling with cystic fibrosis. Such a couple has a 1/24 or 4% chance for having a child with CF compared to the background risk of 1/2000.

Teratogens

Various environmental agents such as infectious diseases (rubella, herpes, CMV, syphilis and toxoplasmosis) and drugs (alcohol, anticonvulsants, coumadin) may cause birth defects that mimic inherited disorders. Maternal factors such as phenylketonuria, diabetes, collagen vascular disease or uterine abnormalities will also cause a variety of birth defects. Distinguishing abnormalities which are genetic, maternal or environmentally-induced can be very important. Elimination or treatment of their cause may lower risks for recurrence.

Identification of Risk by Testing

General screening tests

Population-based screening tests are available to all members of an identified population without identification of risk factor subsets. Newborn screening in Iowa detects phenylketonuria, maple syrup urine disease and galactosemia (all recessive conditions) and the usually non-genetic disorder hypothyroidism. Early identification of these disorders allows for intervention through diet or medication and greatly improved likelihood of normal development.

In the last year, Iowa has seen the introduction of a statewide maternal serum alpha fetoprotein test (MSAFP). MSAFP can be performed on maternal blood at about 16 weeks gestation. Elevated MSAFP is associated with neural tube defects (spina bifida and anencephaly), abdominal wall defects (omphalocele and gastroschisis) and a variety of pregnancy complications such as twins or inaccurate dating. Low MSAFP has been associated with chromosome abnormalities such as Down Syndrome and may help identify younger women at risk to have a child with such disorders.

Although ultrasound is not offered as a universal screening test, it is performed in a large number of pregnancies. It can be effective in diagnosing fetal structural anomalies such as hydrocephalus, renal dysplasia or agenesis and limb defects. It is also an important adjunct to MSAFP screening, amniocentesis and chorionic villi sampling (CVS).

Specific tests for at risk groups

A variety of tests are available for specific risk groups. These include carrier testing, amni-

ocentesis for chromosome abnormalities, other biochemical and molecular abnormalities, chorionic villi sampling and ultrasound.

Carrier testing

Reliable carrier testing has been available for some time for inherited disorders in at risk populations for hemoglobinopathies (e.g. sickle cell anemia), thalassemias and some biochemical disorders (e.g. Tay-Sachs disease). Molecular diagnosis for carriers of an increasing number of disorders present in affected families is also becoming available. Hemophilia A and B, cystic fibrosis and Duchenne Muscular Dystrophy are among those now available. Similarly, women can be identified as "carriers" of other risk factors through testing for diabetes, rubella immunity and uterine abnormalities.

Amniocentesis for chromosomal risks.

Women who deliver after age 35 are at risk for having a child with a chromosome abnormality including Down Syndrome (Trisomy 21) and the more serious Trisomy 18 or Trisomy 13. Some sex-chromosome abnormalities such as XXY, which are usually much less severe clinically, are also increased in this group. Couples who have had a previous child affected with a sporadic chromosome abnormality also have a small but increased risk of having a subsequent child affected with a chromosome abnormality. This risk is usually approximately 1% greater than their age specific risk. Carriers of balanced chromosome rearrangements — either maternal or paternal — can have their pregnancies monitored for an unbalanced rearrangement in the fetus.

Amniocentesis for analysis of biochemical and molecular abnormalities.

Single gene biochemical or molecular abnormalities are caused by small disturbances in the genetic material not visible under the microscope. Currently more than 100 single gene abnormalities are detectable by analysis of cells contained in the amniotic fluid. In these disorders, indirect methods such as analysis of enzyme activity or DNA content must be utilized. These assays are extremely accurate early in pregnancy and can provide options for termination or early treatment of selected disorders. Such assays can also identify carriers in some cases.

Because these disorders are rare and diagnosis is time consuming and expensive, such analyses are available only to families with significantly increased risks. This would include couples with a previously affected child, couples in which both members are identified carriers of a specific genetic disorder and women known to carry a gene for an X-linked recessive disorder. Because there is an increasing number of these tests available, families with questions about a specific disorder can be referred to a nearby genetics center.

Chorionic villi sampling (CVS)

CVS involves aspirating a small portion of the chorion surrounding the developing fetus approximately 9 weeks after the LMP. Except for AFP testing, it provides a sample available for the same tests as amniocentesis (chromosome analyses, biochemical and molecular diagnoses). Although it is only available at a limited number of centers in the U.S. (none in Iowa), it offers the advantage of an earlier diagnosis. Studies are underway to evaluate the safety and the reliability of the procedure.

Ultrasound

Couples who have a child affected with one of several structural abnormalities may benefit from prenatal diagnosis using ultrasound. Limb defects, CNS malformations, renal abnormalities and some cardiac, gastrointestinal and pulmonary abnormalities can sometimes be visualized with ultrasound. As with other forms of prenatal diagnosis, ultrasound in most cases provides reassurance when the fetus is unaffected. In the few cases in which an abnormality is identified, it may allow for possible prenatal therapy, planned delivery or possible termination if the fetus is affected.

Conclusion

A healthy outcome is the goal of reproducing couples. Questions about genetic risks are best addressed preconceptually through discussion of risks identified by history and testing. Once a pregnancy is underway, prenatal diagnosis for at risk conditions allows for the options early diagnosis affords. Decisions about pregnancy should not be directly influenced by health care providers. It is important couples make the best decision for them, with full information and understanding of risks, treatments and prognosis.

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UPDATE ON INFECTIOUS DISEASES

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Lifestyle for Healthy Baby — How You Can Best Counsel Your Patients

SUSAN L. SIPES, M.D.
Iowa City, Iowa

Many studies have shown a healthy lifestyle before and during pregnancy influences the perinatal outcome. This article discusses several important lifestyle considerations, current recommendations for pregnant women and data supporting these recommendations.

THE OPTIMAL WAY to start a healthy pregnancy is with a preconception visit to the physician. The purpose of this visit is to discuss healthy habits a woman should begin to develop before conception. Since most women are already pregnant at the first visit, much of this information can be discussed briefly in a premarital exam or at the postpartum exam in preparation for the next pregnancy. A questionnaire exploring risk factors and habits can be completed by the patient and used to target areas requiring discussion. It can become part of the patient's permanent medical record.

Contraception can be mentioned at this time. Failure rates for the first year of use of various birth control methods should be discussed with patients (Table 1).

It is important to explain failure rates in people who use a method correctly and in typical users. Factors which may cause the discrepancy between these 2 failure rates include fear, discomfort or embarrassment in using the method, decreased enjoyment of intercourse by either partner, difficulty remembering to use the method, cost and conflict with religious beliefs. It is important to find out if the patient feels comfortable with the method she has chosen and if she continues to feel comfortable with it. This can be accomplished by an appointment or phone call several weeks after her initial visit.

Since there are measureable failure rates with these contraceptive methods, patients should be informed of dangers to a potential pregnancy if conception occurs while using the birth control method. For example, the oral contraceptive pill has been shown by some investigators to cause a slightly increased risk of birth defects if taken during the first trimester.[1, 2] Other investigators have shown no association between oral contraceptive use and congenital malformations. This appears to be the majority view at present.[3]

If conception occurs while an IUD is in place,

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the IUD should be removed if the tail is visible to reduce the possibility of late abortion, sepsis or prematurity. Use of an IUD or abortion can have implications for future fertility. Oral contraceptives can be associated with increased incidence of chlamydia trachomatis infection.[1]

The patient may be advised to stop the oral contraceptive and use another method so several menstrual cycles can occur prior to pregnancy. This will help in accurately dating the pregnancy. Accurate dating is important in managing future complications such as preterm labor, preeclampsia, etc. All women should be encouraged to keep a menstrual calendar if they are contemplating pregnancy.

Any woman with a specific health problem that would make her pregnancy high risk should be counseled before conception on increasing her chances of bearing a healthy child. For example, a diabetic woman should have her blood sugar in good control (fasting blood sugar $\leq$ 90, other preprandial blood sugars $\leq$ 100) prior to conception. Several groups have shown a significant correlation between incidence of severe malformations in infants and poorly controlled diabetes in mothers.[4, 5] Another example is an epileptic woman who wishes to conceive. The current recommendation is to consider stopping medications if the woman has not convulsed for a long time.[6, 7] She should be followed clinically and with EEG's prior to conception to decide whether or not convulsions are likely to recur. A third more common example would be a woman who is not rubella immune. Rubella titer testing should be done at the preconception visit and immunization given if necessary prior to conception.

Timing of the first prenatal visit is another important area to discuss with the patient. The current recommendation is that prenatal care should be initiated as soon as there is reasonable likelihood of pregnancy, no later than the second missed period. Some of the responsibility to seek prenatal care is the patient's. However, the physician has the responsibility to see the patient within 1 to 2 weeks of her call. Our promptness will show we are serious about the need for early prenatal care. We should also provide prenatal care to all who need it, including poor and single mothers. It has been repeatedly demonstrated that the cost for good prenatal care is modest compared to the cost of potentially serious complications in the mother and fetus.

Many young women need counseling regarding personal habits before or during pregnancy. Nutrition can significantly affect fetal outcome. The recommended weight gain during pregnancy is 20-27 pounds in a woman with a normal prepregnancy weight (by weight for height charts).[8] This goal can usually be accomplished if women eat a well-balanced diet according to appetite. Very overweight women may have the best outcome with a weight gain of 15-16 pounds, and underweight women need to gain up to 30 pounds optimally to prevent complications such as low birth weight.[8] There is evidence to suggest rigid calorie restriction during pregnancy may be deleterious to the fetus and associated with low birth weight infants.[9]

The following factors have been listed by the ACOG Task Force on Nutrition (1978) and characterize a woman at risk for malnutrition.

1. Under 16 years of age.
2. Economically deprived.
3. Pregnant for the third time within 2 years.
4. Poor past reproductive performance.
5. Consumes a therapeutic diet in the course of management of some preexisting disease.
6. A food faddist.
7. Smokes, drinks or uses hard drugs.
8. Appreciably underweight at the outset.
9. Hematocrit drops much below 33 or hemoglobin concentration falls much below 11 g/dl.
10. Weight gain for any month during the second and third trimesters is less than 2 pounds.[7]

Adequate maternal calorie intake is important so protein, which is needed for fetal growth and development, is not used as a source of energy. The Food and Nutrition Board recommends a 300 kcal daily caloric increase throughout pregnancy. Extra protein is utilized during pregnancy for growth of the fetus, placenta, uterus, breasts, and for increased maternal blood volume. The Food and Nutrition Board recommends 0.9 g/kg/day protein intake for young nonpregnant women and an additional 30 g protein per day in pregnant women. This means a well-balanced diet which includes 3 protein servings which equal six ounces of meat or equivalent proteins, and

(Please turn to page 416)

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4 servings of milk (one cup = one serving) or equivalent milk products.[11] Studies have not shown improvement in birth weight related to protein-rich supplementation.[12, 13]

Mineral intake should be adequate in a diet that provides sufficient calories for appropriate weight gain if iodized salt is used. Only iron provides benefit as a supplement to a normal diet.[10] During the second half of pregnancy, the iron requirement totals about 6-7 mg per day. It is used for development of the fetus and placenta and for increase in maternal erythrocytes.[14] Preferential treatment is given to fetal iron needs. Iron-deficiency anemia can result if iron intake is too low. Even a well-balanced diet cannot usually provide enough iron for these needs. Iron supplementation has the most benefit and the fewest gastrointestinal side effects when started in the second trimester. Recommended iron dosages are:

A. 30 mg per day which will meet all the requirements of a normal pregnancy and protect preexisting iron stores.

B. 60-100 mg per day if the woman is large, has twins, is late in pregnancy or has a mildly depressed hemoglobin.

C. 200 mg per day in divided doses if the woman has a hemoglobin < 10 mg/dl.[10] Calcium and magnesium can inhibit iron absorption from the intestine.

Folic acid is the only vitamin which may be deficient during pregnancy. The maternal folate requirement increases during pregnancy and frequently leads to decreased plasma folate levels. Less frequently, it can lead to hypersegmented neutrophils, megaloblastic erythropoiesis or megaloblastic anemia.[10] Intake of 0.35 mg of folic acid per day can raise the plasma folate level to the normal nonpregnant range.[15] Folic acid has not been shown to affect hemoglobin concentration unless the woman has obvious megaloblastic erythropoiesis.[16] At the University of Iowa, all obstetric patients are given a daily iron and folic acid preparation containing 250 mg ferrous fumarate and 1 mg folic acid.

Vitamin B_{12} can be deficient in a pregnant woman on a strict vegetarian diet. These women can give birth to babies with low B_{12} stores. The infant's B_{12} stores can be further depleted if it is breast-fed.[17]

Smoking during pregnancy should be discouraged. There is considerable evidence that women who smoke bear infants with lower birth weights, higher hemoglobin levels and a delay in cognitive development.[10, 18, 19] In addition, smoking has been associated with an increase in spontaneous abortions, stillbirths and neonatal deaths.[18] However, further confirmatory studies are needed. Significant hypoxia without other cord blood gas abnormalities has occurred in fetuses of rhesus monkeys exposed to cigarette smoke.[18] Smoking has been shown to temporarily decrease intervillous placental blood flow.[20] These factors, when chronic, may explain lower birth weights, higher hemoglobin levels and other problems.

Alcohol use during pregnancy has been associated with fetal alcohol syndrome, fetal wastage, increased incidence of congenital anomalies, lower birth weight and functional disturbance.[21, 22] As few as 2 drinks average per day or periodic binge drinking early in

TABLE I

FIRST-YEAR FAILURE RATES OF BIRTH CONTROL METHODS[1]

Methad	*Lawest Observed Failure Rate*(%)*	*Failure Rate in Typicol User**(%)*
Tubal sterilizotion	0.4	0.4
Vasectamy	0.4	0.4
Injectable progestin	0.25	0.25
Combined birth control pills	0.5	2
Progestin-anly pill	1	2.5
IUD	1.5	5
Condam	2	10
Diaphragm (with spermicide)	2	19
Spange (with spermicide)	9-11	10-20
Cervical cap	2	13
Fooms, creams, jellies, and vaginol suppositaries	3-5	18
Caitus interruptus	16	23
Fertility aworeness techniques (basal body temperoture, mucaus methad, colendor, ond "rhythm")	2-20	24
Douche	—	40
Chonce (no method of birth cantrol)	90	90

*Designed to complete the sentence: "In 100 users who start out the year using a given method and who use it correctly and consistently, the lowest observed failure rate has been _____ ."

**Designed to complete the sentence: "In 100 typical users who start out the year using a given method, the number of pregnancies by the end of the year will be _____ ."

Many of the failure rates (failure rates in typical users) were derived from "Contraceptive Failure in the United States: The Impact of Social, Economic and Demographic Factors." Schirm A., Trussell J, Menken J, Grady W. Family Planning Perspectives 1982;14:68-75.

[1] This table reprinted from: Hatcher RA, *et al: Contraceptive Technology 1986-1987*, ed 13. New York, Irvington Publishers, Inc., 1986, pp. 102.

pregnancy may be associated with recognizable abnormalities in the infant.[22] If a heavy drinker reduces drinking later in pregnancy, her baby may not have a lower birth weight, but has the same chance for congenital abnormalties. The issue of moderate alcohol consumption later in pregnancy remains controversial. One study found no difference between offspring of mild to moderate drinkers compared to the offspring of nondrinkers on the criteria of birth weight or congenital anomalies.[21] However, the adverse fetal effects of alcohol consumption are well-known and consistent. It is not known how much unrecognized effect a smaller alcohol intake may have on the fetus. Women who are pregnant or considering pregnancy should be advised not to drink alcohol.

Little objective evidence is available on the effects of "street drug" use during pregnancy. Opiates such as heroin may cause decreased fetal growth, neonatal drug withdrawal and increased perinatal mortality.[22] Neither opiates nor other "street drugs" such as LSD, cocaine, amphetamines, and marijuana have been clearly linked to congenital defects. However, adequate studies have not been done; therefore, pregnant women should avoid their use. A young woman should be helped to withdraw from these drugs prior to conception.

Prescribing of medications during pregnancy continues to be a dilemma for most physicians. Possible effects of over-the-counter and prescription drugs on the fetus have not been thoroughly studied. Thus, it is best to avoid prescribing medications during pregnancy unless absolutely necessary. In choosing a necessary therapeutic agent, a reference book such as *Drugs in Pregnancy and Lactation* may be helpful.[23]

Sexual activity in the third trimester of pregnancy is also controversial. Williams' textbook recommends abstinence from intercourse for the last 4 weeks of pregnancy or after any threat of abortion or premature labor.[10] The fear is intercourse may cause premature labor, rupture of the membranes, bleeding or infection. One case report showed orgasm during the last 4 weeks of pregnancy may be associated with fetal heart rate decelerations during the resultant uterine contractions.[24] More recent studies have shown no association between sexual intercourse and premature labor, premature rupture of membranes, low birth weight or perinatal death.[25, 26] These studies appear to challenge the traditional interdiction against intercourse late in pregnancy.

Women who are exercise-conscious will have questions about exercise in pregnancy. Moderate exercise is fine during an otherwise uncomplicated pregnancy. Joggers are continuing to jog and run marathons while pregnant.

"However, the adverse fetal effects of alcohol consumption are well-known and consistent. It is not known how much unrecognized effect a smaller alcohol intake may have on the fetus. Women who are pregnant or considering pregnancy should be advised not to drink alcohol."

Mild to moderate exercise, with other variables controlled, may actually protect against preterm delivery, even in women who did not exercise prior to pregnancy.[27] One study showed no change in the reactivity of nonstress tests of women before and after jogging 1.5 miles between 28-38 weeks gestation. The exercise did result in fetal tachycardia which gradually resolved.[28] Employment, housework, child care and leisure-time exercise have been shown not to increase the risk of preterm delivery.[27] Heavy exercise to the point of exhaustion is not recommended due to potential fetal hypoxia and acidosis. In some gravidas, such as those with pregnancy-induced hypertension, multiple gestation or intrauterine growth retardation, a more sedentary lifestyle is advised.[10] However, regular exercise should be encouraged for most normal pregnant women.

The major aspects of a healthy lifestyle that can increase a woman's chance to bear a healthy baby have been covered in this article. These are crucial issues to discuss with the patient, possibly through a questionnaire, and, optimally, at a preconception visit. For medicolegal reasons, details on lifestyle and habits should be recorded in the patient's chart. Education resulting from the patient/physician discussion will make a difference in future pregnancy outcomes.

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Seasonal Childhood Acute Lymphocytic Leukemia in the Midwest

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Acute lymphocytic leukemia (ALL) occurring in pediatric patients of 2 midwestern states during 1973-1980 was examined by epidemiologic investigation. Time series analysis of the monthly cumulative ALL risk for age 0-19 years revealed statistically significant periodicity ($P<0.01$) viz. a trimodal symmetric sine curve with peaks in the spring, late summer/early autumn, and winter.

ACUTE LYMPHOCYTIC LEUKEMIA (ALL) in pediatric patients exhibits features conducive to time series analysis; namely, disease onset is typically abrupt and a diagnosis rapid and accurate. Under these conditions, the date of diagnosis provides a reliable estimate of the time of disease onset, and patient cohort data should accurately reflect seasonal patterns if they exist.

Recently a broad epidemiologic investigation of acute leukemia in the USA during 1969-1981 purportedly disclosed no seasonal patterns in the monthly number of cases with or without stratification by type, age, location, and ethnicity.[1] The authors concluded previous indications of seasonal fluctuations may represent the selective reporting of chance events.[2,3] Utilizing published data from Table I of their report, we derived the monthly number of cases of acute leukemia excluding nonlymphocytic histologic types that occurred in pediatric patients age 0-19 years. Surprisingly, periodic regression analysis of these data revealed that a symmetric four peak sine curve accounted for significant monthly variation ($P<0.05$). Furthermore, the predicted curve showed good fit to the observed data ($r = 0.72$) with projected peaks in the spring, summer, autumn and winter (Figure 1).

These results clearly contradict the contention of no seasonality in ALL and compel further investigation to clarify the issue. For this purpose we have examined time series inci-

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dence data on pediatric ALL in midwestern USA populations and will briefly discuss findings and appropriate methods of analysis.

TABLE I
MONTHLY CASE DISTRIBUTION OF PEDIATRIC ALL AND CORRESPONDING ESTIMATES OF AVERAGE CUMULATIVE RISK IN MIDWESTERN USA POPULATIONS*

Month of	Iowa			Nebraska			Combined		
Diagnasis	cases	risk	(SEM)	cases	risk	(SEM)	cases	risk	(SEM)
January	16	4.2	(1.1)	6	3.4	(0.7)	22	4.0	(0.7)
February	11	3.0	(0.6)	8	4.6	(0.9)	19	3.5	(0.5)
March	20	5.4	(0.8)	8	4.7	(1.2)	28	5.2	(0.6)
April	22	6.2	(1.1)	14	8.2	(2.3)	36	6.8	(1.0)
May	20	5.6	(0.7)	8	4.6	(1.7)	28	5.2	(0.6)
June	14	3.7	(1.1)	5	3.0	(1.2)	19	3.5	(0.8)
July	18	4.8	(1.2)	5	2.7	(0.8)	23	4.1	(0.8)
August	16	4.5	(0.7)	10	5.8	(2.8)	26	5.0	(1.2)
September	15	4.2	(1.6)	10	5.8	(0.8)	25	4.7	(1.2)
October	18	5.0	(1.2)	5	2.9	(1.2)	23	4.4	(1.0)
Navember	14	3.9	(1.0)	2	1.2	(0.8)	16	3.0	(0.7)
December	27	7.7	(1.6)	8	4.6	(2.0)	35	6.7	(1.5)
Overall	211	58.2	(3.9)	89	51.5	(5.4)	300	56.1	(3.4)

*Mean cumulative risk per 10^5 population for the age closs 0-19 yeors. Standard errors of means are in parentheses.

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Materials and Methods

Two independent surveys of ALL diagnosed during 1973-1980 in the age group 0-19 years provided the basic data for analysis: 211 cases from the entire state of Iowa ascertained via the surveillance epidemiology and end results (SEER) program of the National Cancer Institute; and 89 cases from a separate survey conducted over the eastern 57 counties of Nebraska.[4,5] The 2 states lie adjacent in the northern temperate zone of the USA and contain predominantly Caucasian populations. Non-subjective dates *viz.* bone marrow confirmation or first cancer directed therapy were utilized to estimate the month of ALL diagnosis.

Corresponding data of the 2 survey locations were analyzed separately and then pooled for joint analysis. The number of cases occurring per month in the 96 consecutive months of the study were first converted to incidence rates. Monthly age specific incidence rates were estimated by $q=x/n$, where x is the number of age specific cases in a given month and n is the corresponding population census.[6] Age specific estimates were obtained for the intervals 0-4, 5-9, 10-14, and 15-19 years of age. Estimates of monthly cumulative risk were derived by the formula risk = 1-Product$(1-q)^5$. The monthly cumulative risk is the probability an individual develops the subject disease (ALL) during a specific age interval (0-19 years) within a particular month. These time series data were analyzed by periodic regression with stratification for sex and location. This method tests the fit of observed data to symmetric sine curves utilizing ordinary least squares regression.[7]

Results

Periodic regression analysis revealed a trimodal pattern of ALL risks with peaks in the spring (Mar/Apr), late summer/early autumn (Aug/Sep) and winter (Dec/Jan). Remarkably similar trimodal patterns were evident for each location and sex and the pattern was strongest for the combined data ($P<0.01$). Summary statistics of Table I reflect the consistency of time series data from each independent survey location. The excellent fit of projected curves to the observed data is shown for males, females and both sexes together in Figure 2. Interactions of the trimodal sine curve with years and

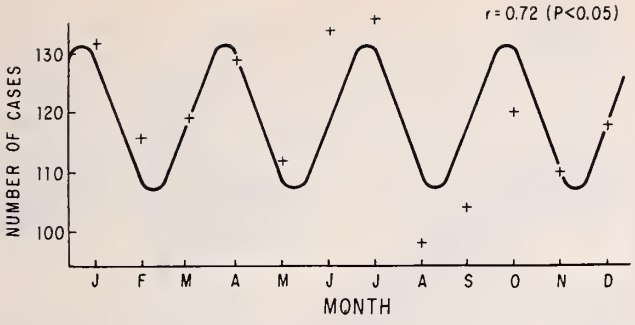


Figure 1. Monthly cose distribution of acute leukemia in the USA excluding nonlymphocytic histologic types far age 0-19 years. Observed doto points were derived from Table I; the predicted curve (salid line) is based on periodic regressian anolysis.

locations, and year and location effects *per se* were not statistically significant in variance analyses.

Discussion

This investigation demonstrates important seasonal variation in the cumulative risk of childhood ALL in midwestern USA populations. Time series analysis disclosed a trimodal pattern with peaks in the spring, late summer/early autumn and winter. These peak times of occurrence are characterized by distinct climatic changes and viral infections in the midwestern USA. Spring is typified by volatile temperature fluctuations rising above freezing, onset of the tree pollen season and the common cold season (rhinovirus infections); late summer/early autumn brings onset of the ragweed pollen season, cooler temperatures and peaking of enterovirus attack rates; and winter is subject to subfreezing temperatures and peaking of influenza attack rates (orthomyxovirus infections).[8-11] Since no single environmental factor appears to correlate with the cycle of ALL risk in its entirety and none of the obviously coincident infectious disease patterns involve viruses with suspected leukomogenic activity, we suggest seasonal forces may promote leukomogenesis via indirect mechanisms of action.

As an example, consider the synchrony of pollenosis with the observed peaks in ALL risk. Various allergenic extracts have been shown to stimulate transformation of cultured lymphocytes,[12] and certain kinds of pollen and plant constituents are potent lymphoproliferative agents *in vitro* e.g. pokeweed pollen and plant lectins such as phytohemagglutinin.[13] Thus, inhalant allergens may prime the lymphocytes for leukomogenesis by stimulating cell proliferation and selective gene activity which in turn accelerate the frequency of transforming genetic translocations. Similar mechanisms may be evoked by concomitant exogenous viral infections with the important qualification that any viral genome could also be capable of reactivating oncogenic proviruses via genetic homology.

Latent viruses suspect of inducing transforming genetic translocations *in vivo* include Epstein Barr Virus (EBV) and the RNA retroviruses. Notably, some studies indicate the existence of seasonality in the incidence of infections, mononucleosis and Burkitt's lymphoma, both of which have been casually

(Please turn to page 422)

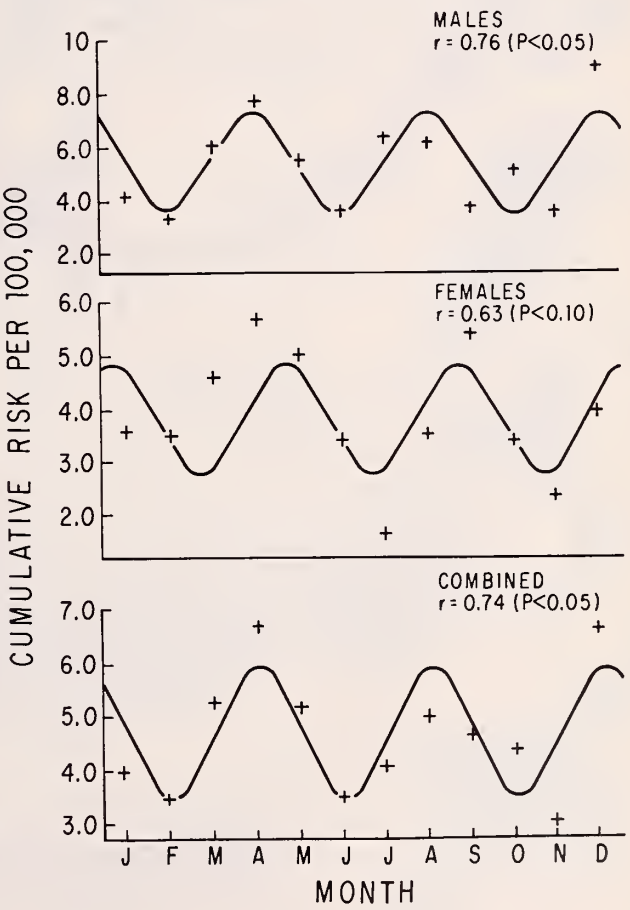


Figure 2. Monthly cumulative risk of ocute lymphacytic leukemio for age 0-19 years in midwestern USA populations (salid lines denote predicted curves).

linked with EBV.[15, 16] Furthermore, it is well known latent viruses can be reactivated by temporal changes in their endogenous environment, e.g. fever, immunosuppression and exposure to ionizing radiation.[17] In view of the results herein, interactions between seasonal factors (inhalent allergens and exogenous viruses) and potentially leukomogenic latent viruses may play a vital role in the development of ALL.

Methodologic problems exist in the general treatment of temporal data on disease onset. Prerequisites for the analysis of time series data include abrupt disease onset, accurate and rapid diagnosis, reliable reporting of dates of diagnosis and accurate characterization of the populations at risk. To avoid artifactual reporting bias, it is necessary to utilize monthly incidence rates as opposed to pooled monthly totals without a defined denominator. The analysis of time series rates can be efficaciously handled by analysis of variance incorporating periodic regression.[7] In the fitting of Fourier curves it should also be remembered typical geographic locations can have as many as 4 distinct seasons per year. Consequently, time series data must be examined for multiple peaks. Finally, a separate analysis should be conducted for each survey environment with reasonable stratification for important demographic factors.

Acknowledgement

The authors gratefully acknowledge the State Health Registry of Iowa, K.M. McKeen, Director, and Directors and Staff of tumor registries of all metropolitan medical centers and hospitals in eastern Nebraska, for assistance in data procurement.

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References noted in this article are available from the authors or the editors of IOWA MEDICINE.

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Endometrial hyperplasia was significantly reduced when progestin was added to PREMARIN therapy for more than ten days a month.[1-4] The risk of endometrial hyperplasia may also be reduced through cyclic administration of unopposed, low-dose PREMARIN.

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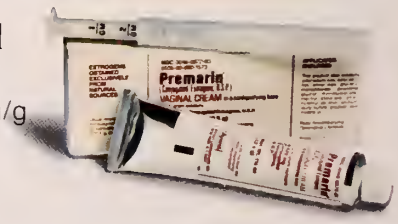
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For atrophic vaginitis

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Vaginal Cream

0.625mg/g



BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION AND PATIENT INFORMATION, SEE PACKAGE CIRCULARS.)*

PREMARIN® Brand of conjugated estrogens tablets, USP
PREMARIN® Brand of conjugated estrogens Vaginal Cream in a nonliquefying base

1. ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA

Three independent case control studies have reported an increased risk of endometrial cancer in postmenopausal women exposed to exogenous estrogens for more than one year. This risk was independent of the other known risk factors for endometrial cancer. These studies are further supported by the finding that incidence rates of endometrial cancer have increased sharply since 1969 in eight different areas of the United States with population-based cancer reporting systems, an increase which may be related to the rapidly expanding use of estrogens during the last decade. The three case control studies reported that the risk of endometrial cancer in estrogen users was about 4.5 to 13.9 times greater than in nonusers. The risk appears to depend on both duration of treatment and on estrogen dose. In view of these findings, when estrogens are used for the treatment of menopausal symptoms, the lowest dose that will control symptoms should be utilized and medication should be discontinued as soon as possible. When prolonged treatment is medically indicated, the patient should be reassessed on at least a semiannual basis to determine the need for continued therapy. Although the evidence must be considered preliminary, one study suggests that cyclic administration of low doses of estrogen may carry less risk than continuous administration; it therefore appears prudent to utilize such a regimen. Close clinical surveillance of all women taking estrogens is important. In all cases of undiagnosed persistent or recurring abnormal vaginal bleeding, adequate diagnostic measures should be undertaken to rule out malignancy. There is no evidence at present that "natural" estrogens are more or less hazardous than "synthetic" estrogens at equiestrogenic doses.

2. ESTROGENS SHOULD NOT BE USED DURING PREGNANCY.

The use of female sex hormones, both estrogens and progestogens, during early pregnancy may seriously damage the offspring. It has been shown that females exposed in utero to diethylstilbestrol, a non-steroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated as not greater than 4 per 1,000 exposures. Furthermore, a high percentage of such exposed women (from 30% to 90%) have been found to have vaginal adenosis, epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are precursors of malignancy. Although similar data are not available with the use of other estrogens, it cannot be presumed they would not induce similar changes. Several reports suggest an association between intrauterine exposure to female sex hormones and congenital anomalies, including congenital heart defects and limb reduction defects. One case control study estimated a 4.7-fold increased risk of limb reduction defects in infants exposed in utero to sex hormones (oral contraceptives, hormone withdrawal tests for pregnancy, or attempted treatment for threatened abortion). Some of these exposures were very short and involved only a few days of treatment. The data suggest that the risk of limb reduction defects in exposed fetuses is somewhat less than 1 per 1,000. In the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well controlled studies that progestogens are effective for these uses. If PREMARIN is used during pregnancy, or if the patient becomes pregnant while taking this drug, she should be apprised of the potential risks to the fetus, and the advisability of pregnancy continuation.

DESCRIPTION: PREMARIN (conjugated estrogens, USP) contains a mixture of estrogens, obtained exclusively from natural sources, blended to represent the average composition of material derived from pregnant mares' urine. It contains estrone, equilin, and 17α-dihydroequilin, together with smaller amounts of 17α-estradiol, equilenin, and 17α-dihydroequilenin as salts of their sulfate esters. Tablets are available in 0.3 mg, 0.625 mg, 0.9 mg, 1.25 mg, and 2.5 mg strengths of conjugated estrogens. Cream is available as 0.625 mg conjugated estrogens per gram.

INDICATIONS AND USAGE: PREMARIN (conjugated estrogens tablets, USP): Moderate-to-severe *vasomotor* symptoms associated with the menopause. (There is no evidence that estrogens are effective for nervous symptoms or depression without associated vasomotor symptoms and they should not be used to treat such conditions.) **Osteoporosis (abnormally low bone mass).** Atrophic vaginitis. Kraurosis vulvae. Female castration.

PREMARIN (conjugated estrogens) Vaginal Cream is indicated in the treatment of atrophic vaginitis and kraurosis vulvae. PREMARIN HAS NOT BEEN SHOWN TO BE EFFECTIVE FOR ANY PURPOSE DURING PREGNANCY AND ITS USE MAY CAUSE SEVERE HARM TO THE FETUS (SEE BOXED WARNING).

Concomitant Progestin Use: The lowest effective dose appropriate for the specific indication should be utilized. Studies of the addition of a progestin for 7 or more days of a cycle of estrogen administration have reported a lowered incidence of endometrial hyperplasia. Morphological and biochemical studies of the endometrium suggest that 10 to 13 days of progestin are needed to provide maximal maturation of the endometrium and to eliminate any hyperplastic changes. Whether this will provide protection from endometrial carcinoma has not been clearly established. There are possible additional risks which may be associated with the inclusion of progestin in estrogen replacement regimens. (See PRECAUTIONS.) The choice of progestin and dosage may be important; product labeling should be reviewed to minimize possible adverse effects.

CONTRAINDICATIONS: Estrogens should not be used in women (or men) with any of the following conditions: 1. Known or suspected cancer of the breast except in appropriately selected patients being treated for metastatic disease. 2. Known or suspected estrogen-dependent neoplasia. 3. Known or suspected pregnancy (See Boxed Warning). 4. Undiagnosed abnormal genital bleeding. 5. Active thrombophlebitis or thromboembolic disorders. 6. A past history of thrombophlebitis, thrombosis, or thromboembolic disorders associated with previous estrogen use (except when used in treatment of breast or prostatic malignancy).

WARNINGS: Long-term continuous administration of natural and synthetic estrogens in certain animal species increases the frequency of carcinomas of the breast, cervix, vagina, and liver. There are now reports that estrogens increase the risk of carcinoma of the endometrium in humans. (See Boxed Warning.) At the present time there is no satisfactory evidence that estrogens given to postmenopausal women increase the risk of cancer of the breast, although a recent study has raised this possibility. There is a need for caution in prescribing estrogens for women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms. A recent study has reported a 2- to 3-fold increase in the risk of surgically confirmed gallbladder disease in women receiving postmenopausal estrogens.

Adverse effects of oral contraceptives may be expected at the larger doses of estrogen used to treat prostatic or breast cancer or postpartum breast engorgement; it has been shown that there is an increased risk of thrombosis in men receiving estrogens for prostatic cancer and women for postpartum breast engorgement. Users of oral contraceptives have an increased risk of diseases, such as thrombophlebitis, pulmonary embolism, stroke, and myocardial infarction. Cases of retinal thrombosis, mesenteric thrombosis, and optic neuritis have been reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in users of oral contraceptives. If feasible, estrogen should be discontinued at least 4 weeks before surgery of the type associated with an increased risk of thromboembolism, or during periods of prolonged immobilization. Estrogens should not be used in persons with active thrombophlebitis, thromboembolic disorders, or in persons with a history of such disorders in association with estrogen use. They should be used with caution in patients with cerebral vascular or coronary artery disease. Large doses (5 mg conjugated estrogens per day), comparable to those used to treat cancer of the prostate and breast, have been shown to increase the risk of nonfatal myocardial infarction, pulmonary embolism and thrombophlebitis. When doses of this size are used, any of the thromboembolic and thrombotic adverse effects should be considered a clear risk.

Benign hepatic adenomas should be considered in estrogen users having abdominal pain and tenderness, abdominal mass, or hypovolemic shock. Hepatocellular carcinoma has been reported in women taking estrogen-containing oral contraceptives. Increased blood pressure may occur with use of estrogens in the menopause and blood pressure should be monitored with estrogen use. A worsening of glucose tolerance has been observed in patients on estrogen-containing oral contraceptives. For this reason, diabetic patients should be carefully observed. Estrogens may lead to severe hypercalcemia in patients with breast cancer and bone metastases.

PRECAUTIONS: Physical examination and a complete medical and family history should be taken prior to the initiation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic organs, and should include a Papanicolaou smear. As a general rule, estrogen should not be prescribed for longer than one year without another physical examination being performed. Conditions influenced by fluid retention such as asthma, epilepsy, migraine, and cardiac or renal dysfunction, require careful observation. Certain patients may develop manifestations of excessive estrogenic stimulation, such as abnormal or excessive uterine bleeding, mastodynia, etc. Prolonged administration of unopposed estrogen therapy has been reported to increase the risk of endometrial hyperplasia in some patients. Oral contraceptives appear to be associated with an increased incidence of mental depression. Patients with a history of depression should be carefully observed. Preexisting uterine leiomyomata may increase in size during estrogen use. The pathologist should be advised of estrogen therapy when relevant specimens are submitted. If jaundice develops in any patient receiving estrogen, the medication should be discontinued while the cause is investigated. Estrogens should be used with care in patients with impaired liver function, renal insufficiency, metabolic bone diseases associated with hypercalcemia, or in young patients in whom bone growth is not complete. If concomitant progestin therapy is used, potential risks may include adverse effects on carbohydrate and lipid metabolism.

The following changes may be expected with larger doses of estrogen.

a. Increased sulfobromophthalein retention.

b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability.

c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by PBI, T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered.

d. Impaired glucose tolerance.

e. Decreased pregnanediol excretion.

f. Reduced response to metyrapone test.

g. Reduced serum folate concentration.

h. Increased serum triglyceride and phospholipid concentration. As a general principle, the administration of any drug to nursing mothers should be done only when clearly necessary since many drugs are excreted in human milk.

ADVERSE REACTIONS: The following have been reported with estrogenic therapy, including oral contraceptives: breakthrough bleeding; spotting; change in menstrual flow; dysmenorrhea; premenstrual-like syndrome; amenorrhea during and after treatment; increase in size of uterine fibromyomata; vaginal candidiasis; change in cervical erosion and in degree of cervical secretion; cystitis-like syndrome; tenderness, enlargement, secretion (of breasts); nausea, vomiting, abdominal cramps, bloating; cholestatic jaundice; chloasma or melasma which may persist when drug is discontinued; erythema multiforme; erythema nodosum; hemorrhagic eruption; loss of scalp hair; hirsutism; steepening of corneal curvature; intolerance to contact lenses; headache; migraine; dizziness; mental depression; chorea; increase or decrease in weight; reduced carbohydrate tolerance; aggravation of porphyria; edema; changes in libido.

ACUTE OVERDOSAGE: May cause nausea, and withdrawal bleeding may occur in females.

DOSAGE AND ADMINISTRATION:

PREMARIN® Brand of conjugated estrogens tablets, USP

1. *Given cyclically for short-term use only.* For treatment of moderate to severe *vasomotor* symptoms, atrophic vaginitis, or kraurosis vulvae associated with the menopause (0.3 to 1.25 mg or more daily). The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible. Administration should be cyclic (eg, three weeks on and one week off). Attempts to discontinue or taper medication should be made at three- to six-month intervals.

2. *Given cyclically:* Female castration. Osteoporosis. Female castration—1.25 mg daily, cyclically. Adjust upward or downward according to response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Osteoporosis —0.625 mg daily. Administration should be cyclic (eg, three weeks on and one week off).

Patients with an intact uterus should be monitored for signs of endometrial cancer and appropriate measures taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

PREMARIN® Brand of conjugated estrogens Vaginal Cream

Given cyclically for short-term use only. For treatment of atrophic vaginitis or kraurosis vulvae.

The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible.

Administration should be cyclic (eg, three weeks on and one week off).

Attempts to discontinue or taper medication should be made at three-to-six month intervals.

Usual dosage range: 2 to 4 g daily, intravaginally, depending on the severity of the condition.

Treated patients with an intact uterus should be monitored closely for signs of endometrial cancer and appropriate diagnostic measures should be taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

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COMMENTING EDITORIALLY



WHEN AND WHERE WILL IT STOP?

In May, there was another increase in the cost of D.T.P. vaccine. There have been 4 price increases since 1981. The present price per vial is $171, equivalent to 11.40 per dose. The cost per vial in 1981 was $5.43.

Lederle Laboratories says their inability to obtain product liability insurance prompted the latest price increase. Of the $171, $120 is to be set aside for a liability self-insurance fund. The resultant impact of the price change is the marked increase in cost to the patient. In the private sector, unless they have an insurance program, families may balk at providing protection for their children. Yet, a problem arises in that sector. Will the insurance or health maintenance organization reimburse the physician appropriately? If not, it is conceivable there could be reluctance by certain physicians to extend care. Another concern is the availability of funds to purchase the vaccine for public clinic patients. Should the funds be curtailed or unavailable many problems may arise. Fewer children will receive protection, there will be a larger nucleus of suspectible individuals and the diseases which have become of historical interest will return.

Much comment could be made about the increased incidence of litigation resulting from alleged vaccine damages. This litigation has resulted in increased premiums for product liability. The spiral ascends without an apparent end. It is laudable there has not been a cessation in the manufacture and availability of the vaccine. It will still be available at least in the foreseeable future. Hopefully immunization will continue unabated to avoid reversion to the horrors of epidemics.

> ***"Our profession must join forces with the public sector to continue all efforts to provide effective and safe preventive measures for the healthful futures of all children."***

Our profession must join forces with the public sector to continue all efforts to provide effective and safe preventive measures for the healthful futures of all children. To have lost all the good gained by effective immunization measures would be foolhardy. As our profession traditionally has endeavored to improve all aspects of health care, our efforts to prevent disease must be scrutinized continually for improvements. Our efforts are noble and must continue to be so, for today's healthy babies are our hope for the future. Coping with future social problems will be enough without being hindered by health problems. — M.E.A.

RECENT BOOKS

Swackhammer, Annette and Moss, Ralph, 1986, *Caring*, Doubleday and Co., New York, N.Y., $15.95. Three nurses, formerly students together, find themselves once again together in a large city hospital. Each has a different purpose in life, different problems, and different attitudes, but a common purpose in caring for their patients.

Lewis, Howard R. and Martha E., 1986, *The People's Medical Manual*, Doubleday and Co.,

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New York, N.Y., $19.95. Consumer-oriented medical advice compiled by non-medical writers. The secondary title seems a bit ostentatious "Everything You Need to Know About Health and Safety." The format is that of an encyclopedia. The lay person may find this a quick reference to over 500 entries included in the 578 pages.

Afifi, Adel K. and Bergman, Ronald A., 1985, *Basic NeuroScience: A Structural and Functional Approach*, 2nd edition, Urban and Schwarzenberg, Baltimore, Maryland, $24.50. The first edition of this comprehensive study by 2 professors at the University of Iowa was in 1979. The second edition has been enhanced by new and improved illustrations as well as some rewritten and expanded chapters. Written as a textbook for students of neuro-science, it may well serve as a reference text.

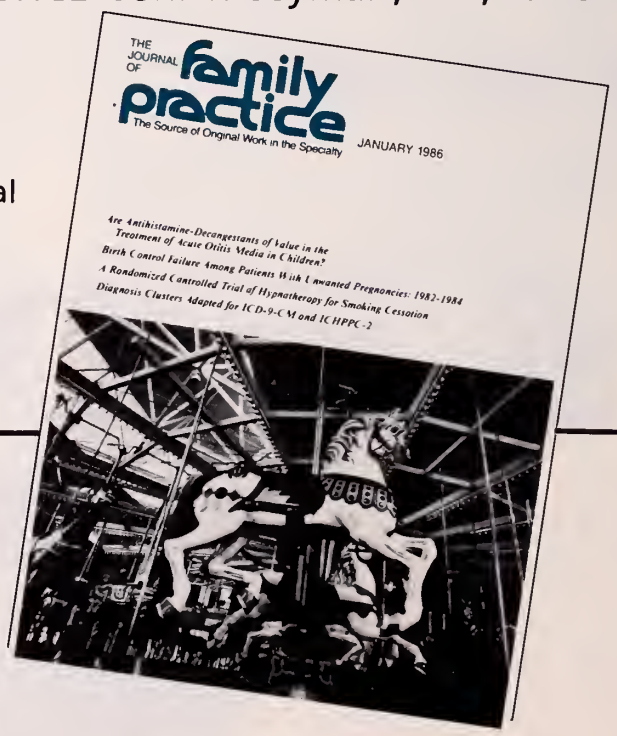
Robertson, Patricia, 1986, *The Premature Labor Handbook*, Doubleday & Co., Inc., New York, New York, $16.95 (Hard Cover), $9.95 (Paperback). Written for the lay reader, this book discusses medical aspects of premature labor, the incompetent cervix and preterm delivery. How to cope with these complications of pregnancy is a major theme. This book should be of interest to any obstetric patient and her partner who have faced or are facing this complication of about 8 to 10% of pregnancies.

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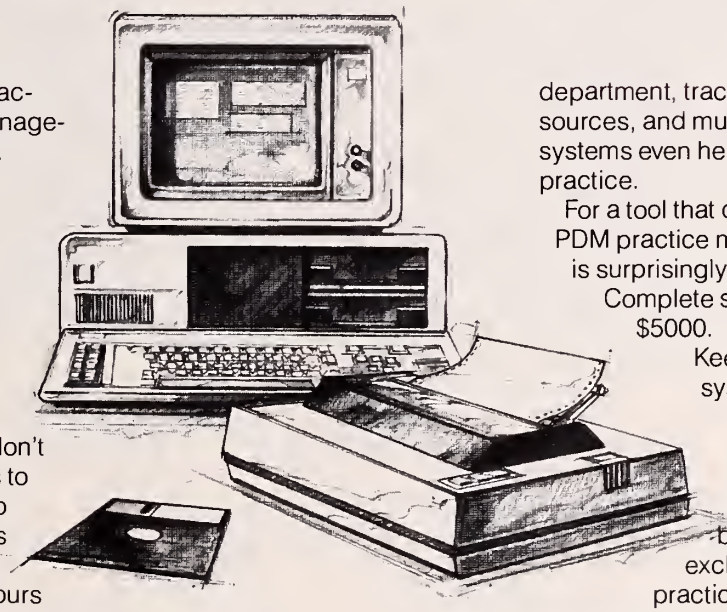
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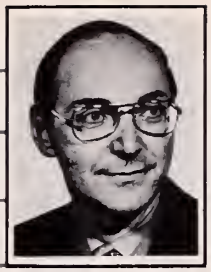
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



FLUSHING, BOOZING, AND THE SANDWICH ISLANDERS

IN THE PAST YEAR I heard at least two lectures that caught my fancy. By that I mean they seemed interesting at the time, as if I were hearing an absorbing tale, and they caused me to reflect later on the topic. If a lecture can do those two things, I'm willing to call it a success. Lots of folks in the world of medical education spend much podium time bad-mouthing the lecture. What needs that, I submit, are poor lectures, meaning (1) they are given by people who can't do it well (after all, everybody knows that some folks have a knack for telling a story and some don't) and (2) they are given at the invitation of somebody who can't tell a good lecture from a bad one, or is just discharging an assignment on a program committee, or really can't find anybody better. One of the all-time great story tellers was Mark Twain; I can tell that to be so from reading what he writes plus knowing he had enormous success as a lecturer. Anybody with his reputation must have been a fine spinner of tales.

The topics in my title all have to do with stories about alcohol. One came in a standard pharmacologic lecture about ethanol dehydrogenase, the enzyme largely responsible for the metabolism of ethanol — where it's formed and what its chemical and biological effects are and how intra-personal or family differences may relate to the prevalence and course of alcoholism. The next topic appeared in a talk by a dermatologist interested in facial flushing and how the degree of flush after alcohol ingestion varies greatly among persons, families, and even ethnic groups. He showed how orientals were particularly likely to show the flush reaction, and correspondingly, produced only small amounts of the enzyme. These characteristics seemed clearly heritable, and he had persuasive pedigrees for his evidence.

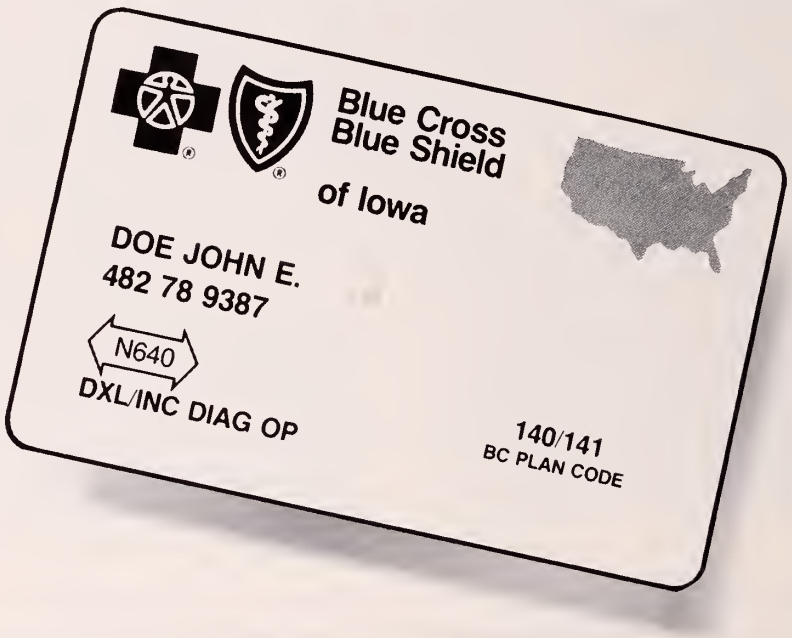
Such genetic studies are part of a growing branch of biology called pharmacokinetics, concerned with the inherited differences in enzymes which control so much drug and food metabolism and thus account for so much individual variation. This young hybrid of biochemistry, pharmacology and genetics could have got off to a bounding start long ago if somebody had thought hard enough about the significance of Mark Twain's observations of the Sandwich (Hawaiian) Islanders, after he spent what he called "half a year of luxurious vagrancy in the islands" on a visit there in 1866. In an 1873 essay he remarked that drinking "is not an objection to a Sandwich Islander. Whisky cannot hurt them; it can seldom even tangle the legs or befog the brains of a practiced native. It is only water with a flavor to it . . .; it is what cider is to us." What we might term "resistance" he goes on to attribute to the Hawaiian practice of eating *poi*, derived from the taro root, and the fermented beverage *awa* the natives distill from it. Twain called the *awa* "so terrific that mere whisky is foolishness to it. It turns a man's skin to white

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> ***"It is hyperbolic to tout Mark Twain as the father of pharmacokinetics, but he surely merits lots of credit for his writing, and as is true for any fine writer, lots of credit for being a splendid observer."***

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

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Jeannine Schulze

QUESTIONS AND ANSWERS



IMS Auxiliary Goals

A growing and active organization, the Iowa Medical Society Auxiliary has a number of important projects planned for the coming year. Jeannine Schulze, 1986/87 IMS Auxiliary president, comments here on upcoming activities and her goals.

The theme for your year as IMS Auxiliary president is "Improving the Quality of Life." Why was this theme chosen?

The purpose of the Auxiliary, as stated in our bylaws, is: "to assist in those programs of the Iowa Medical Society that improve the health and quality of life for all people." This year, the American Medical Association Auxiliary is focusing on motivation. Through our service and educational programs, the Auxiliary is well-equipped to represent the image of the medical profession as quality health care providers.

The IMS/IMS Auxiliary Joint Leadership Conference is scheduled for October 15. Please tell us about the program.

"Communications" is the theme for the Conference. The format will be of interest to both physicians and spouses, focusing on topics including "You Are What You Communicate," doctor-patient communication, liability reform update, communication skills to avoid malpractice suits and stress in the physician's family. We are expecting a good turnout.

What Auxiliary projects are planned to emphasize this theme?

This is the age of coalitions. Through the networking process we can be more effective in our efforts to be viewed as a viable organization. We are represented on the Iowa Coalition for Comprehensive School Health Education, the Healthy Mothers-Healthy Babies Coalition and the Clean Indoor Air Coalition. Of course, our most natural coalition is with the IMS.

What other Auxiliary projects are planned for this year?

The Auxiliary will hold its legislative event at the Convention Center January 28. Last year was the first time the Auxiliary hosted Iowa legislators. The event was a good opportunity to become personally acquainted with legislators. We encourage all auxilians and their physician spouses to attend this year's event to discuss with our legislators important health issues including liability reform. We also plan to air several health-related public service announcements on alcohol, drug and child abuse this year. These public service announcements are sponsored by the IMS and the Auxiliary.

What are your goals as IMS Auxiliary president?

It is vital to increase Iowa's membership in the federation of county, state and national Auxilians.

I would like to see the relationship between the IMS and the Auxiliary continue to flourish for the benefit of attaining our mutual goals. I would like to see support groups established for the physician's family in the areas of troubled physicians, troubled spouses and troubled children. Together, we can improve the quality of life for all Iowans.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

IMIPENEM-CILASTATIN SODIUM

IMIPENEM-CILASTATIN SODIUM (Primaxin®) is the first of a new class of antibiotics called carbapenems. It is currently marketed by Merck, Sharp, and Dohme as "the broadest spectrum antibiotic ever." In this article, we will examine its chemistry, mechanism of action, efficacy, pharmacokinetics, and adverse reactions.

Chemistry/Mechanism of Action

Streptomyces cattleya is a species of Streptomyces whose culture broths were found to have antimicrobial capacities, specifically, inhibition of peptidoglycan (cell wall) biosynthesis.[1] The entity in the broth responsible for this action was named thienamycin. It belongs to a larger class of compounds known as carbapenems which are beta-lactam antibiotics with a modified five-member ring. Thienamycin was found to have unusually high resistance to beta-lactamases due to the *trans* configuration of its hydroxyethyl side chain with respect to the five-member ring. However, it proved to be unstable in concentrated solutions. Consequently, a more stable derivative, N-formimidoyl thienamycin (imipenem), was developed. Animal studies revealed that imipenem is extensively metabolized by a renal tubular brush-border enzyme (dehydropeptidase-1) and that its metabolite is nephrotoxic. Due to concern over this toxicity and low levels of active drug in urine (precluding effective treatment of urinary tract infection), a specific enzyme inhibitor was sought. Cilastatin was found to be an excellent specific, competitive, reversible dehydropeptidase-1 inhibitor which, when given in adequate dosage simultaneously with imipenem, prevented nephrotoxicity and restored urine imipenem level to bactericidal range. Further studies revealed that a one-to-one fixed weight ratio of imipenem to cilastatin (typically 500 mg to 500 mg) was effective in blocking renal metabolism for the duration of a usual dosing interval (8 hours).

Efficacy

In the in vitro situation, imipenem inhibits 90% or more of clinical bacterial isolates.[2] Specifically, gram positive cocci are sensisitve, with the exception of *Streptococcus faecium*. Important discrepancies between minimal inhibitory concentrations and minimum bactericidal concentrations have been noted with methicillin-resistant *Staphylococcus aureus* and *Staphylococcus epidermidis*, enterococcus and *Listeria monocytogenes*.[3, 4] Several-fold greater concentrations may be required for bactericidal effect, as opposed to growth inhibitory effect, with these organisms. Penicillinase-producing Neisseria are suspectible to imipenem.[2] Gram negative aerobic rods are also inhibited with the exceptions of *Pseudomonas maltophilia* and *Pseudomonas cepacia*, which are usually resistant.[5] Frequently, resistance to imipenem has occurred during treatement of *Pseudomonas aeruginosa* infections.[6] A several-fold difference between bactericidal concentrations and inhibitory concentrations has been noted frequently

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26th - 27th	Adolescent Medicine: The High Risk Youth
Oct 1st - 3rd	Internal Medicine Review
5th - 8th	Institute on Human Fertility
8th - 11th	Principles of Colon & Rectal Surgery
17th - 18th	Office Management of Ear, Nose, and Throat
17th	Current Concepts in Cardiology of the Elderly
22nd - 24th	Annual Autumn Obstetrics and Gynecology Seminar
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Dec 6th	Epilepsy Update

SELECTED 1987 COURSES

Mar 4th - 5th	Drug Therapy Symposium
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10th - 11th	Eating Disorders
20th - 24th	Family Practice Review: Update 1987
28th - 29th	Alzheimer's Disease: Toward a Standard of Care
May 15th - 16th	The Complicated Diabetic
17th - 20th	North American Primary Care Research Group
19th	Symposium on Gynecologic Oncology
20th - 22nd	Current Concepts in Radiation Therapy
29th - 31st	Surgery for the Primary Care Physician (Brainerd, MN)
June 5th - 6th	Workshops on Clinical Hypnosis
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17th - 19th	Annual Surgery Course: Progress in Vascular Surgery
24th - 26th	Topics and Advances in Pediatrics
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with *Pseudomonas aeruginosa*. Most anaerobic bacteria, with occasional exceptions in certain strains of *Clostridium difficle* and *Bacteroides fragilis*, are inhibited by imipenem.[2] Other pathogens which demonstrated in vitro susceptibility include Legionella, *Yersinia enterocolitica*, *Nocardia asteroides*, and campylobacter.[2] Interestingly, in vitro the combined use of other beta-lactam antibiotics (penicillins or cephalosporins) with imipenem can diminish the activity of imipenem against gram negative bacilli.[5] The clinical significance of these in vitro phenomena is uncertain.

In studies using animal models to compare antibiotic regimens, imipenem was less effective against enterococcal endocarditis (than penicillin and gentamicin used together) and less effective against methicillin-resistant *S. epidermidis* endocarditis (than vancomycin).[7]

In randomized human trials, the following results have been obtained:

Imipenem versus Cefazolin

In 1983, 21 patients were randomly assigned to either imipenem-cilastatin (250 mg/250 mg IV every 6 hours) or cefazolin (1 gm IV every 6 hours) for clinically proven bacterial infection of several types (septicemia, pneumonia, osteomyelitis, pyelonephritis, cellulitis, cutaneous abscesses).[8] Investigators were blinded as to the identity of the treatment drug. All eleven patients in the imipenem group were cured; 9 of 10 patients treated with cefazolin were cured.

Marier *et al* randomized 186 patients to imipenem-cilastatin (250 mg/250 mg IV every 6 hours) or cefazolin (1 gm IV every 6 hours) for 5 to 14 days.[9] One hundred forty-one patients were assessed for efficacy of therapy. Cure or improvement was reported in 94% of the imipenem-cilastatin patients compared to 99% of the cefazolin patients. Types of infections included skin/soft tissue, lower respiratory tract, urinary tract, bone and joint, and bacteremia.

Imipenem versus Gentamicin/ Clindamycin

The first comparative trial of these agents is from 1984 and involved 163 patients with "serious" infections randomized to imipenem-cilastatin (500 mg/500 mg IV every 6 hours) or gentamicin (1.5 mg/kg body weight IV, adjusted to achieve peak serum levels $\geq$ 4 mg/l and trough levels $\leq$ 2 mg/l) and clindamycin (600 mg IV every 6 hours).[10] Treatment failure rate was 4% in the imipenem-cilastatin group verses 16% in the gentamicin/clindamycin group. Problems with this study include uneven distribution of patients with abdominal infections, septicemia, or both (more in the gentamicin/clindamycin group) and conceivably inadequate peak gentamicin levels.

Solomkin *et al* reported results of 74 patients with pulmonary, soft tissue, and intra-abdominal mixed flora infections treated with imipenem-cilastatin (500 mg/500 mg IV every 6 hours) or gentamicin (1.5 mg/kg body weight adjusted to achieve peak levels between 6 and 8 mg/l and trough levels $<$ 2 mg/l) and clindamycin (600 mg IV every 6 hours).[11] No difference in mortality was noted; nephrotoxicity was greater in the gentamicin/clindamycin group. Two failures against *Pseudomonas aeruginosa* were recorded in the gentamicin/clindamycin group, whereas none were noted in the imipenem-cilastatin group.

Forty patients with moderate to severe infection received imipenem-cilastatin (500 mg/ 500 mg IV every 6 hours) or gentamicin (1.5 mg/kg body weight at intervals adjusted to achieve unspecified peak and trough serum levels) and clindamycin (600 mg IV every 6 hours) for at least 5 days.[12] Overall cure rates were statistically not different. The authors note shorter hospitalization, fewer febrile days, and shorter duration of therapy in the imipenem-cilastatin group.

A matched patient control study design (not prospective, randomized design) was employed in patients with gangrenous or perforated appendicitis. Patients were matched with respect to age, pathologic stage of disease, and surgical management.[13] Thirty-three patients were treated with imipenem-cilastatin (500 mg/ 500 mg IV every 6 hours); and 66 controls were treated with gentamicin (1.5 mg/kg body weight at intervals adjusted to attain peak serum levels of 6-8 mg/l) and clindamycin (600 mg IV every 6 hours) for a minimum of 3 days. All patients underwent surgery within 24 hours after institution of antibiotic therapy. Cure rates were statistically not different (97% versus 100%). Days of fever and days of hospital stay were fewer in the imipenem group. Days to return of intestinal function were fewer in the clindamycin/gentamicin group.

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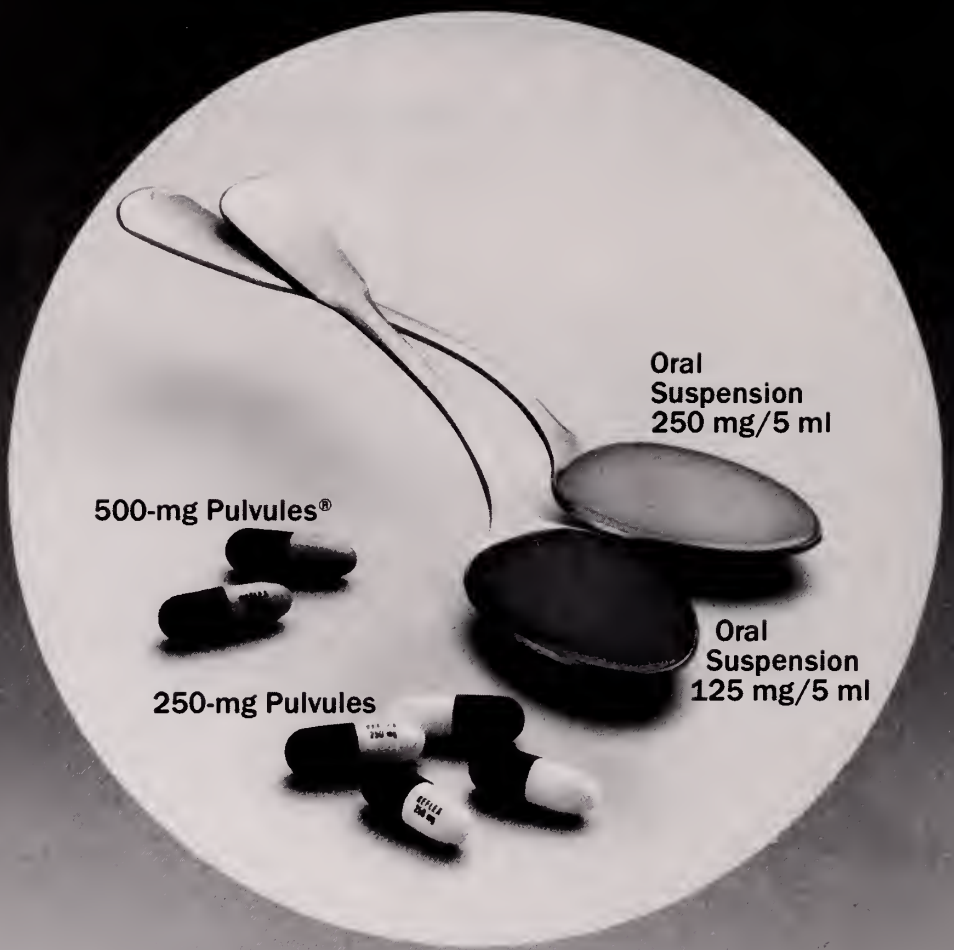
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Imipenem versus Moxalactam

Eron *et al* treated 39 patients with septicemia, soft tissue, urinary tract, and respiratory tract infections with imipenem-cilastatin (500 mg/500 mg IV every 6 hours) or moxalactum (2 gm IV every 8 hours) for 3 to 28 days.[14] There was improvement or cure in 60% of patients receiving moxalactam versus 89% ($p = 0.06$) in the imipenem group.

In a multicenter trial, 311 patients received either imipenem-cilastatin (500 mg/500 mg IV every 6 hours) or moxalactam (3-6 gm/day) occasionally accompanied by an aminoglycoside (in 7 patients) or a penicillinase-resistant penicillin (in 6 patients) for 5 to 14 days.[15] Infections in the 2 groups were similar except for a longer duration of therapy (11.0 versus 8.9 days) and greater percentage of bacteremic illness (19.0 versus 8.3) in the imipenem group. A positive clinical outcome was favored in the imipenem group (95% versus 87%; $p = 0.01$) The imipenem group also fared better in those with *Pseudomonas aeruginosa* infections.

Imipenem versus Cefotaxime

In 1983 a study in Switzerland with 40 patients allocated to either imipenem-cilastatin (500 mg/500 mg IV t.i.d.) or cefotaxime (2 gm IV t.i.d.) as treated for severe bacterial infections was published.[16] The types of infections were equally distributed between groups and included complicated urinary tract infections, pneumonias, bone and soft tissue infection, and 6 septicemias. No significant difference in cure or improvement rates was noted.

A multicenter trial in Argentina evaluated 20 patients with either imipenem-cilastatin (500 gm/500 mg IV every 8 hours) or cefotaxime (2 gm IV every 8 hours).[17] Infections included mediastinitis, osteomyelitis, urinary tract infection, lower respiratory tract infection, and soft tissue infection. Cure and improvement rates were no different between the 2 groups.

A trial in Canada using 36 patients with infections and doses of antibiotics similar to the Argentine study also found approximately equivalent efficacy between the 2 treatment regimens.[18]

Pharmacokinetics

Parenteral administration of imipenem-cilastatin is necessitated by the lack of any appreciable absorption after oral administration.[19] Plasma concentrations of imipenem-cilastatin 1 hour after an IV dose of 1 gm delivered over 30 minutes to healthy adults are 18.7 ± 2.0 mg/l and 19.1 ± 4.6 mg/l, respectively. Trough levels obtained 5 hours 30 minutes after infusion are 0.8 ± 0.26 mg/l for imipenem and < 0.75 mg/l (the limit of the assay) for cilastatin.

Protein binding has been reported at 21%, or less with increasing serum concentrations of drug.[19] Cerebrospinal fluid levels after repeated doses of 1 gm IV every 6 hours ranged from 0.5 mg/l to 11 mg/l.[2] Mean concentration per gram of dry weight of bone was 2.6 μg in patients receiving 2 to 4 gm/day for osteomyelitis.[2] Unlike many other newer beta-lactam antibiotics, imipenem is excreted in bile in minute amounts ($< 1\%$).[2] This tends to limit its effect on altering bowel flora. There are no data currently available for drug concentration in milk, fetal tissue, or placenta.

In patients with normal renal function, approximately one half of a dose of imipenem is eliminated by glomerular filtration, one quarter by active secretion at the renal tubules, and the remainder is handled by extrarenal metabolism.[2] Serum half-lives for both imipenem and cilastatin are approximately 1 hour.[2] This is prolonged to 4 and 16 hours, respectively, in complete renal failure. Hemodialysis can reduce the half-lives of 2.5 and 3.9 hours, respectively. A regimen in complete renal failure of 500 mg/500 mg IV every 12 hours did not result in drug accumulation.[2]

Without the co-administration of cilastatin, between 5% and 40% (reflecting large interindividual variation) of a dose of imipenem is found in the urine. When cilastatin is used, the amount of imipenem in the urine is approximately 70% of a dose. Imipenem serum levels are increased slightly with the use of cilastatin, but half-life is not prolonged. If probenecid is given along with imipenem and cilastatin, imipenem secretion at the tubular level is blocked and serum half-life does increase.[2]

Adverse Effects

From a clinical base of 2,516 patients, Calandra *et al* summarize adverse effects seen with the administration of the imipenem-cilastatin combination.[20] In decreasing order of occurrence, the adverse effects are phlebitis/throm-

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bophlebitis (3.8%), diarrhea (3.3%), nausea (2.4%), dermal allergic changes (2.3 %) vomiting (1.7%), seizure (0.9%), erythematous infusion site (0.7%), and infused vein pain (0.7%). Only 1 of 149 deaths occurring in these 2,516 patients was felt to be drug related. Of note is that patients with a history of serious beta-lactam allergy were excluded from this population. The incidence of seizures while using imipenem was found to be 1.5%. This is no different than the incidence of seizures in patients receiving other antibiotics (1.6%). Most of the seizures occurred in patients with a history of prior seizures, central nervous system disease, and/or renal insufficiency. Nausea and vomiting may be relieved in some instances by slowing the infusion rate. There were no reports of imipenem-cilastatin related bleeding, hearing loss, or renal failure. The rate of colonization and superinfection (11.2% and 3.8%, respectively) were consistently as low or lower than other antibiotics in the comparative studies. Pseudomembranous colitis (positive colonoscopy with or without *Clostridium difficile* toxin or culture) or antibiotic-related diarrhea (*Clostridium difficile* toxin or culture, *without* positive colonoscopy) occurred in 0.92% of patients. The most common laboratory abnormalities were transient increases in liver function tests. A positive Coombs' test and eosinophilia were seen in 2% and 4% of all patients, respectively. Reversible diminution in white blood cell and segmented neutrophil counts deemed drug related occurred in 0.3% and 0.1% of patients, respectively.

Summary and Recommendations

The fixed combination preparation of imipenem and cilastatin is the first carbapenem product introduced into the ever growing armamentarium of antibiotics available to the clinician. It has the broadest spectrum of any betalactam derivative yet described. Experience with this drug has been confined to patients who are not penicillin allergic. It is excreted largely by renal mechanisms. It has proven to be of at least equal efficacy with cefazolin, cefotaxime, moxalactam, and the combination of gentamicin/clindamycin in the treatment of a wide range of infections. Its safety profile is comparable to other beta-lactam derivatives. Antibiotic dosage should be decreased in renal insufficiency. Further studies need to be performed to understand the role of this antibiotic in the treatment of meningitis and in the neutropenic patient.

The use of imipenem is currently recommended in polymicrobial intra-abdominal infections, as well as other serious infections with gram positive cocci (except methicillin resistant Staphylococci), anaerobes, and aerobic gram negative rods (except *Pseudomonas maltophilia* and *Pseudomonas cepacia*). Use of imipenem-cilastatin for the treatment of less serious infections easily treated by a less expensive drug (e.g., cefazolin) is not advised. In particular, the use of imipenem, rather than the combination of an aminoglycoside with a second drug for anaerobic coverage, is justified. Obvious benefits in this situation are the lack of renal toxicity and the lack of need for serum drug levels. There is disagreement regarding the use of imipenem as monotherapy against *Pseudomonas aeruginosa* infections. The emergence of resistant organisms (by in vitro testing) during therapy is common, but clinical outcome is not necessarily adversely affected.[6, 11, 15] Since the combination of an aminoglycoside with imipenem-cilastatin is seldom synergistic against *Pseudomonas aeruginosa* (< 13%) and the combination of other beta-lactam antibiotics (e.g., piperacillin) with imipenem-cilastatin can have an antagonistic effect, imipenem-resistant *Pseudomonas aeruginosa* is best treated with the combination of aminoglycoside and an antipseudomonal penicillin.[21] — Rebecca Stene, M.D., *Fellow, Department of Internal Medicine.*

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OUR MAN IN EDUCATION

(Continued from page 429)

fish-scales that are so tough a dog might bite him, and he would not know it till he read about it in the papers."

Of course, nobody could have measured ethanol dehydrogenase then, but even now the opportunity for a research project looms its head. I'd hypothesize that the drinking of *awa* and other sources of ethanol will induce higher levels of the enzyme, but that a population of native Hawaiians — and there are still a few of them left — would be found to be genetically superior in this alcohol-degrading contest. (It is conjectural simultaneously that some groups of native Hawaiians are not so enzymatically well-endowed.) This is the essense of "home-spun" observation that can lead the curious to lots of new knowledge, some of it of high practical importance.

It is hyperbolic to tout Mark Twain as the father of pharmacokinetics, but he surely merits lots of credit for his writing, and as is true for any fine writer, lots of credit for being a splendid observer.

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

PROGRAMS TO ASSIST INDIGENT PREGNANT WOMEN

*"Every word and every act by all who come in contact with the pregnant woman should impress upon her both the importance and the availability of prenatal care for her fetus and herself."**

THE PRECEDING QUOTE supports the general belief that early entry into prenatal care benefits both mother and infant. It is the goal of this article to discuss the programs available to assure mother and children, in particular those with low income or limited availability of health services, access to quality maternal and child health services. The programs are Maternal Health Services, Medicaid/Medically Needy, Special Supplemental Food Program for Women, Infants, and Children (WIC), and OB Indigent Care.

Maternal Health Program

The Maternal Health Program strives to assure quality maternity care and to help each woman maximize the full learning and growth potential that her unique pregnancy has to offer. In Iowa maternal health services and child health services for low income families subsidized by the Department of Public Health are dependent on federal funds from the Maternal and Child Health Services Block Grant, state funds, third-party payors, and community support. The Department of Public Health receives grant applications from local agencies and develops contracts with these agencies to provide health services. The Department establishes Standards of Care, monitors the services provided for quality and cost effectiveness, and provides training and technical assistance to promote and assure quality services.

Those persons eligible are women in their childbearing years living within a geographical service area. There is no charge for services to families under 150% of the Federal Poverty Guidelines and a sliding fee scale is used for families over 150% of the Federal Poverty Guidelines.

Services provided in the maternal health centers follow the standards established by the American College of Obstetrics and Gynecology for ambulatory obstetric care. Physicians, in coordination with nurses, nutritionists, dental hygienists and social workers provide the following services:

1. Early case finding to enroll pregnant women in prenatal care during the first trimester of pregnancy.
2. Prenatal care beginning in the first trimester of pregnancy and continuing care at regular intervals with systems to ensure compliance.
3. Educational programs dealing with changes due to pregnancy, preparation for labor and delivery, and infant care.
4. Nutrition and dental assessment and counseling (WIC Special Supplemental Food Program is available for all eligible maternity patients).
5. Social assessment and counseling.
6. Assessment of pregnancy risks with appropriate referral to other care providers, community services agencies, and local Departments of Human Services, when needed.
7. Monitoring of high risk women to ensure compliance with prenatal care.
8. Assistance in arranging for delivery.

* Pritchard, MacDonald. *Williams Obstetrics*, 16th Edition, Appleton-Century-Crofts, New York, 1980, Page 305.

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

9. Postpartum services including family planning and well-child services.

Medicaid/Medically Needy

The Medicaid program pays for covered medical and health care costs of persons eligible for a medically needy program. The Medicaid program is financed by federal and state funds and is administered by the Iowa Department of Human Services.

To be eligible for Medicaid under the Medically Needy Program, you must be pregnant or under age 21, including unborn children, and the income and resources of household members are within certain limitations. A single individual may be eligible with resources of up to $1700. Two or more persons may be eligible with resources up to $2550. The earned and unearned income of all responsible relatives (parents, stepparent) and of all other potentially eligible family members will be counted. If eligibility relates to ADC or Child Medical Assistance, resources and income will be determined according to ADC rules and policies. If eligibility relates to SSI, resources and income will be determined according to SSI guidelines.

There is a 2 month certification period after which reapplication is required. If there are unpaid medical bills during the 3 months prior to application certification can be retroactive.

The medically needy income level is 133% of the ADC assistance payment based on family size. If total net countable income is equal to or less than the medically needy income level, members of a family who are pregnant or under age 21 will be eligible for Medicaid. Incurred medical expenses can also be used to lower a family's income to the eligibility level. This is referred to as spendown. Persons may apply for Medicaid/Medically Needy Programs at their county Department of Health Services office.

WIC — Special Supplemental Food Program for Women, Infants and Children

The WIC program provides nutrition education, nutrition screening, and supplemental foods, to assure adequate nutrition for low-income pregnancy, postpartum, or breastfeeding women, infants, and children 0-5 years of age. Funds for the program come from the U.S. Department of Agriculture through the Child Nutrition Act of 1966, as amended in 1978.

Eligibility for the program is based on the presence of nutritional risk as determined by a brief health history, results of blood tests and anthropometric measurements, a diet assessment, and income. Participants receive special WIC checks, which they can use at the local grocery store to purchase specific food items determined by the WIC nutritionist. Nutrition education is also provided through one-to-one counseling, small-group classes, and a newsletter for local nutritionists, "The Nutrition Quarterly News."

O.B. Indigent Care Program

O.B. Indigent care is available to anyone applying who is not eligible for Title XIX, Medicaid/Medically Needy, Maternal and Child Health, or does not have their own insurance coverage or resources. The program is funded by a state legislative appropriation. The primary provider, in the past, has been the University of Iowa Hospitals and Clinics. The last session of the Iowa legislature expanded the program to allow paying for local deliveries on a limited basis.

The services provided are obstetric and newborn care. In counties where the Department of Public Health does not have Maternal Health programs the O.B. Indigent care program will cover prenatal care. Eligibility will be determined by the county relief director and will be based on 150% of poverty.

Summary

Although activities are directed toward those in need of subsidized care the concern for individual well-being extends to *all* Iowa families. The ultimate goal is to assure that each pregnancy is a wanted pregnancy for a woman who is prepared for that pregnancy; that she and her family have easy access to the health, social, and educational resources necessary to assure a healthy outcome for both mother and infant.

For more information about these programs contact the Iowa Department of Public Health, Maternal & Child Health Section, Lucas Building, 3rd Floor, Des Moines, Iowa 50319 or call 1/800/532-1579.

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July 1986 Morbidity Report

Disease	July 1986 Total	1986 to Date	1985 to Date	Most July Cases Reported From These Counties
Aids	0	10	8	—
Amebiosis	3	24	31	Boone, Johnson
Brucellosis	0	1	1	—
Chickenpox	17	6629	5336	Scottered
Compylobocter	52	191	21	Scottered
Cytomegolovirus	0	12	4	—
Eotons Agent Infection	0	6	4	—
Encepholitis, virol	2	6	9	Cerro Gordo, Dubuque
Erythemo Infectiosum	2	262	0	Johnson, Polk
Gostroenteritis (GIV)	55	11686	10089	Scottered
Giordiosis	20	171	228	Scottered
Hepotitis, A	1	27	31	Dubuque
Hepotitis, B	9	53	62	Scottered
Hepotitis, Non A-B	2	16	12	Mohosko, Polo Alto
Hepotitis type unspecified	0	0	0	—
Herpes Simplex	94	725	628	Scottered
Herpes Zoster	0	0	0	—
Histoplosmosis	3	17	14	Block Howk, Polk Woodbury
Infectious mononucleosis	1	153	105	Story
Influenzo, lob confirmed	0	247	169	—
Influenzo-like illness (URI)	79	71716	24995	Scottered
Legionellosis	0	6	4	—
Molorio	0	1	1	—
Meningitis oseptic	4	21	18	Jockson, Josper, Pottowottomie, Scott
bocteriol	9	57	85	Scottered
meningococcol	1	11	19	Dubuque
Mumps	5	20	9	Iowo, O'Brien, Scott
Pertussis	2	11	5	Adoms, Keokuk
Robies in onimols	18	115	96	Scottered
Reye Syndrome	0	0	4	—
Rheumotic Fever	0	6	2	—
Rubello (Germon meosles)	0	0	0	—
Meosles	46	87	0	Scottered
Solmonellosis	64	132	125	Scottered
Shigellosis	0	4	25	—
Toxic Shock Syndrome	2	6	5	Fremont, Linn
Tuberculosis				
totol ill	6	29	42	Scottered
boct. pos.	6	26	39	Scottered
Typhoid Fever	0	1	1	—
Venereol diseoses:				
Gonorrheo	241	2100	2448	Scottered
Chlomydio	184	1392	21	Scottered
Syphilis	0	6	10	—

Other Non-Reportoble Diseoses: Clonochis — 2, Muscotine; Rotovirus — 1, Johnson; Trichuris Trichiuro — 1, Muscotine; Ureoplosmo ureolyticum — 1, Jefferson, 6, Johnson, 1, Linn, 1, Polk, 1, Woshington.

Recent Highlights

U. OF I. COLLEGE OF MEDICINE

BREAKTHROUGH IN CYSTIC FIBROSIS STUDY: UI researchers have discovered an ion channel in the body's breathing passage cells that may be abnormal in people with cystic fibrosis and may be responsible for the breathing complications that are characteristic of this disease. **Michael Welsh,** Internal Medicine, and his colleagues studied cells in tissue culture to discover the channel that allows chloride to enter the respiratory tract and assist in the normal secretion of fluid and mucus. In a previous study, they found that the lining of the airways in cystic fibrosis patients is impermeable to the chloride ion.

BICYCLISTS DO NOT ACCUMULATE INTERNAL BODY HEAT FASTER *during cycling while wearing a helmet, as many competitive cyclists have insisted for years.* ***Carl Gisolfi,*** *Physiology and Biophysics and Exercise Science and Physical Education, studied six cyclists from an Iowa City bicycling club and learned that thermoregulation has nothing to do with helmets. Gisolfi and his colleagues measured the subjects' oxygen uptake levels while they performed two rides — one while wearing a helmet, one while bareheaded — on stationary bicycles. During their two-hour rides, the cyclists exercised at a heart rate of about 150 beats per minute. The UI researchers found no difference in the elevation of internal body temperature, heart rate, or skin temperature. "We hope this study convinces more people to wear helmets and protect themselves from potentially debilitating injuries," Gisolfi says.*

JAY KRACHMER, Ophthalmology, became chairman of the Eye Bank Association of America (EBAA) July 1 for a two-year term. Krachmer also endorsed the proposed National Organ and Tissue Donor Act at a news conference in Washington, D.C., where he attended the 25th anniversary meeting of the EBAA. The bill provides federal encouragement for states to pass "required request" laws, under which hospital representatives must remind the families of deceased patients of the opportunity to donate tissue or organs. He has been chairman-elect of the EBAA for the past year.

AT-A-GLANCE . . . ***Robert Bar,*** *Internal Medicine, is the new director of the UI Diabetes Research and Endocrinology Center. The Iowa diabetes center is devoted to research in molecular biology, cell biology, membrane biology and computer-assisted analysis programs . . .* ***Lawrence G. Hunsicker,*** *Internal Medicine, has been elected president-elect of the American Society of Transplant Physicians. The major professional society for physicians involved in clinical transplantation, the ASTP deals with policy formulation and professional issues in solid organ transplantation. Hunsicker's clinical research interests include transfusion effects and clinical trials in transplantation.*

FRANK MORRISS *will become head of Pediatrics in both the UI College of Medicine and in University Hospitals and Clinics next Jan. 1. He comes to Iowa from the University of Texas Medical School in Houston, where he serves as professor, Pediatrics and Obstetrics, Gynecology and Reproductive Sciences, as well as departmental vice-chairman for research development. Known widely through his published works, Morriss is co-authoring a book on the role of human milk in infant nutrition. He serves as host this year for "Specialty Update: Pediatrics," a monthly continuing education series produced for cablecasting by Lifetime Television. Morriss succeeds* ***Fred G. Smith, Jr.,*** *Pediatrics, who will resume full-time research and teaching.*

This report has been compiled by The University of Iowa Health News Service.

News About Colleagues

ABOUT IOWA PHYSICIANS

The medical library at Story County Hospital has been named the F. G. Neglia Medical Library in honor of **Dr. F. G. Neglia,** longtime Maxwell physician. Dr. Neglia received the M.D. degree at Georgetown University in Washington, D.C. He began his medical practice in Maxwell in 1946 and has been semi-retired since 1981. . . . **Dr. William C. Rosenfeld,** Mason City, has been elected to Alpha Omega Alpha, a national honor medical society. Dr. Rosenfeld was cited for his contributions to organized medicine, medical education, and distinguished humanitarian service to suffering Third World masses. Dr. Rosenfeld is Speaker of the Iowa Medical Society House of Delegates. . . . **Dr. Gilbert Toffol** has joined **Dr. Dennis Nitz** in the practice of neurology in Sioux City. Dr. Toffol received his D.O. degree at the Chicago College of Osteopathic Medicine; served his neurology residency at Loyola University Medical Center and took postgraduate work in cerebral vascular disease at University of Iowa Hospitals in Iowa City. . . . **Dr. Hormoz Rassekh,** Council Bluffs, has been appointed to a special committee on Foreign Medical Education established by the Federation of State Medical Boards of the U.S. He is 1 of 4 physicians serving on the committee. . . . **Dr. Lawrence C. O'Toole,** LeMars, was honored by the LeMars Rotary Club for

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his 47 years of medical service to the community. He began medical practice in LeMars in 1929, retiring in 1976. Dr. O'Toole also was inducted into the Plymouth County Hall of Fame. . . . **Dr. Duane K. Caylor** has joined **Dr. Mary A. Lorenz** in family practice in Manchester. Dr. Caylor received the M.D. degree at the U. of I. College of Medicine and served his family practice residency at St. Joseph's Mercy Hospital in Mason City.

Two Des Moines pediatricians, **Dr. George G. Caudill** and **Dr. James W. Hopkins** were honored at the Pediatric Spring Conference in Des Moines. Dr. Caudill received the Dr. Charlotte Fisk Pediatric Award for his contributions to teaching and his involvement in programs related to the advancement of pediatric care. Dr. Hopkins received the Raymond Blank Memorial Hospital for Children Recognition Award, presented annually to physicians directly involved in pediatric care and related advanced educational programs. . . . **Dr. Joseph P. Trotzig,** Akron, retired in July. Dr. Trotzig received the M.D. degree at U. of I. College of Medicine. He began medical practice in Akron in 1952. Dr. and Mrs. Trotzig plan to continue to reside in Akron. . . . **Dr. Steven J. Harmer** has joined Associated Internists, P.C. in Fort Dodge. Dr. Harmer received the M.D. degree at the University of Minnesota School of Medicine; took postgraduate work at St. Francis Hospital in LaCrosse, Wisconsin, and served his internal medicine residency in Des Moines. . . . **Dr. Opas and Puantong Jutabha** have closed their medical practice in Sigourney and relocated in Buckeye, Arizona. The two physicians have practiced in the Sigourney area since 1967. . . . **Dr. Robert T. Tobias** has joined the Family Health Center in Toledo. Dr. Tobias received the M.D. degree at Ohio State University School of Medicine and completed his family practice residency at Grant Medical Center in Columbus, Ohio. . . . **Dr. Jeffrey F. Jones** has joined Medical Associates in Iowa City. Dr. Jones received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency at Iowa Lutheran Hospital in Des Moines.

Dr. James W. Rathe has been elected president of the Waverly Municipal Hospital medical staff. Other officers elected are **Dr. H. M.**

(Please turn to page 444)

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Hanson, vice president; and **Dr. David B. MacMillan,** secretary-treasurer. All are Waverly physicians. . . . **Dr. Thomas E. Kane,** Boone physician for 48 years, retired in July. Dr. Kane received the M.D. degree at Creighton University School of Medicine in Omaha, Nebraska. He began medical practice in Boone in 1938. Dr. Kane plans to spend his retirement years in Hawaii. . . . **Dr. John M. Rhodes, Sr.,** Pocahontas, was honored at a reception sponsored by the Pocahontas Chamber of Commerce for his more than 40 years of providing medical care to the Pocahontas community. Dr. Rhodes received the M.D. degree at the U. of I. College of Medicine; interned at Denver General Hospital in Denver, Colorado. He began medical practice in Pocahontas in 1946. Dr. Rhodes is a past vice president of the Iowa Medical Society, member of the University of Iowa Alumni board, past board member of the Iowa State Board of Medical examiners, past president of the Pocahontas School Board, and member of the Blue Shield board of directors. He currently is serving as president of the North Central Medical Conference and as IMS delegate to the AMA. . . . **Dr. Willard P. Marble,** retired Marshalltown physician, was honored at the 65th anniversary party of the Marshalltown Noon Lions Club for his 50 years as club member.

DEATHS

Dr. Richard L. Allen, 59, Las Vegas, Nevada, died in Pangiutch, Utah, May 26. Dr. Allen received the M.D. degree at the U. of I. College of Medicine and interned at St. Louis City Hospital, St. Louis, Missouri. He practiced medicine in Iowa from 1958 to 1968. Dr. Allen was a member of the American Association of Allergy and Immunology and former chief of Family Practice at Valley Medical Center in Las Vegas.

Dr. Paul W. Brecher, 74, Alta, died April 19 at Buena Vista County Hospital in Storm Lake. Dr. Brecher received the M.D. degree at the U. of I. and interned at Nashville General Hospital in Nashville, Tennessee. He began medical practice in Storm Lake in 1939, retiring in 1973. He was a member of the American Acad-

emy of Family Practice and served on the IMS Judicial Council from 1952 to 1958.

Dr. Kenneth E. Lister, 71, Ottumwa, died July 12 at Ottumwa Regional Health Center. Dr. Lister received the M.D. degree at U. of I. College of Medicine; interned at Iowa Methodist Medical Center in Des Moines; and served his surgery residency at Minneapolis General in Minneapolis, Minnesota. He was a past president of the Iowa Medical Society; diplomate of the American Board of Surgery and a fellow of the American College of Surgeons.

Dr. William G. Rence, 69, Mason City, died July 18 at a Mason City hospital. Dr. Rence received the M.D. degree at Rush Medical School in Chicago; and completed internal medicine and anesthesiology residencies at University of Iowa Hospital and Clinics. He began medical practice in Mason City in 1955. Dr. Rence was a member of the American Society of Anesthesiology, Iowa Society of Anesthesiologists, American Pain Association and past president of the medical staff at St. Joseph's Mercy Hospital in Mason City.

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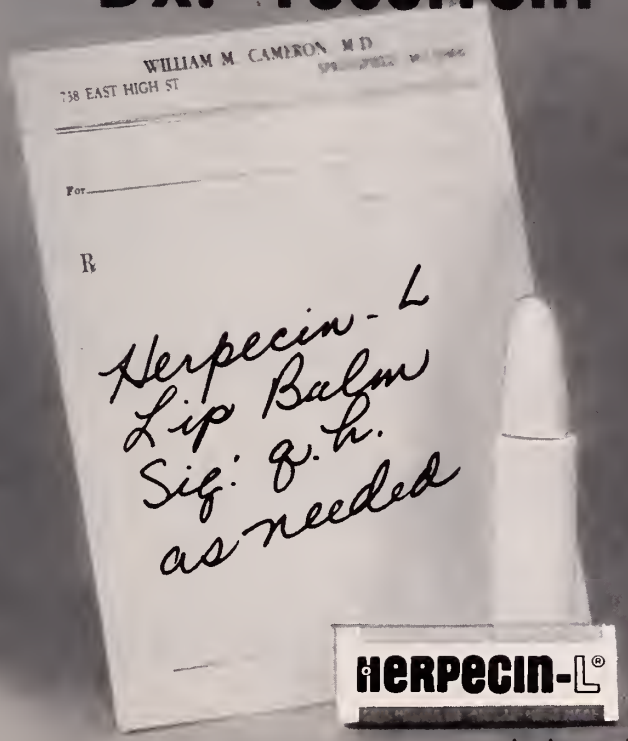
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A Monthly Commentary

IN THE PUBLIC INTEREST

Nourishing Wisdom at Iowa

IN THIS NUTRITION-CONSCIOUS AGE, University of Iowa medical students aren't surprised to find themselves reading and hearing about nutrition on their very first day of class.

They'll return to that subject again and again as they progress through their next 4 years. By the time they approach graduation, interested students may take a "senior elective" in nutrition, together with practitioners who come to the Iowa campus for a week of intensive continuing medical education taught by pediatric nutritionists.

During their first week in medical biochemistry, Iowa students begin laying their nutrition knowledge foundations by learning the basics of how food is used for energy, bad diets, obesity, properties of fats, carbohydrates, proteins, vitamins and minerals, and how each of these is handled by the body.

In addition to hearing formal lectures on the subject, tomorrow's doctors learn nutrition by hearing faculty and residents instruct new mothers in hospital wards and clinics and nurses teaching the techniques of breast-feeding.

As students pass through various clerkships, faculty discuss diet in relation to a host of diseases. Students gain first-hand knowledge of malnourishment as they help treat patients who don't eat a regular diet. They also become familiar with various food allergies and intolerances.

As second-semester sophomores, Iowa medical students take "Introduction to Clinical Medicine," which involves learning to take patient histories. Structured questioning covers recent weight gains or losses, specific eating or digestive problems, food allergies, use of vitamin or mineral supplements, medication-related eating problems and nutritional counseling.

Depending upon the patient's age, condition and health problems, students then pursue specific nutritional concerns related to infants, young children, teenagers, elderly, pregnancy, lactation, vegetarian, overweight, diabetes, cardiovascular disease and cancer.

Practicing what they're learning to preach, the students also join in "nutrition lunches" during their ICM experience and again during their junior-year rotations in internal medicine. Special menus and lectures emphasize nutrition's role in endocrine, digestive, renal and cardiac problems.

Iowa sophomores this fall may elect a new course, "Practical Clinical Nutrition," in which each student will be asked to complete an investigation into a nutritional area of his or her choosing. The course will include presentations on sports nutrition, weight loss, health fraud and quackery.

Even in a state where food is produced in overwhelming abundance, the need for more nutrition knowledge is obvious to anyone who examines patients, looks closely at almost any group of fellow Iowans or tries to order a bran muffin in a typical Iowa restaurant. That the doctors of tomorrow are learning today how to help their patients through nutrition education is clearly In The Public Interest.

September 1986

Iowa Medicine

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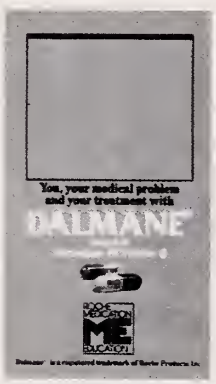
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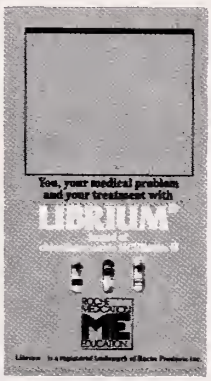
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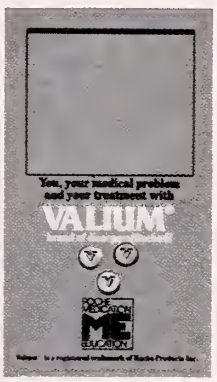
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IowaMedicine

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October 1986

IowaMedicine

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Journal of the Iowa Medical Society

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ABOUT THE COVER — Caring for the growing number of elderly is one of the most crucial issues facing Iowa physicians. This issue of IOWA MEDICINE explores health care problems associated with aging including "Falls In the Elderly," Alzheimer's disease and families caring for homebound elderly relatives.

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IOWA MEDICINE, Journol of the Iowo Medicol Society (ISSN 0746-8709) is published monthly by the Iowo Medicol Society, 1001 Grand Avenue, West Des Moines, Iowo 50265. Subscription Price: $15 per yeor. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-closs postoge poid ot Des Moines, Iowo, ond ot additionol mailing offices. POSTMASTER: Send oddress chonges to IOWA MEDICINE, Journol of the Iowo Medicol Society, 1001 Grand Avenue, West Des Moines, Iowo 50265.

NATIONAL ADVERTISING BUREAU: Stote Medical Journol Advertising Bureou, Inc., 711 South Blvd., Ook Pork, Ill. 60302. Phone 312/383-8800

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DES MOINES, IOWA
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UPDATE ON EMERGENCY MEDICINE

NOVEMBER 12, 1986

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PRESIDENT'S PRIVILEGE



COMMUNICATING WITH THE ELDERLY

As THIS issue of IOWA MEDICINE demonstrates, the Iowa Medical Society is becoming increasingly involved with health care issues facing elderly Iowans.

The number of elderly people — especially in Iowa — is predicted to increase dramatically within the next decade. Accessible and affordable health care for these people is perhaps the most crucial issue we will face in the near future.

For this reason, the IMS has intensified efforts to communicate with elderly Iowans.

For the past several years, the IMS Board of Trustees has invited to their meetings representatives of older Iowans' organizations to discuss mutual topics of concern. During these meetings, particular attention has been paid to the Medicare program.

Last year, a full day of the annual IMS Scientific Session was devoted to scientific and socioeconomic presentations related to care of the elderly. In addition, the IMS Committee on Aging has an increased number of projects planned for the future.

In this month's IOWA MEDICINE, physicians and others involved with caring for older people discuss a wide range of pertinent and interesting topics. I urge you to read carefully. Health care for the elderly is an issue none of us can afford to ignore.

L. D. Caraway, M.D.

L. Dean Caraway, M.D.
President

University of Iowa Plays Crucial Role In Alzheimer's Research

ANTONIO DAMASIO, M.D., PH.D.
Iowa City, Iowa

Since 1984, the Alzheimer's Disease Research Center at the University of Iowa College of Medicine has combined clinical and research efforts toward understanding this debilitating affliction. Researchers at the Center have made landmark discoveries about Alzheimer's disease and have been innovators in developing diagnostic procedures and management strategies for patients and their families.

THE UNIVERSITY OF IOWA College of Medicine's Alzheimer's Disease Research Center has been in existence for nearly 2 years. During that period, investigators in the Center have made some exciting strides in basic research and development of diagnostic procedures for Alzheimer's disease. They have confirmed many of their early findings regarding the location and role of some specific brain lesions in Alzheimer's disease.

Victims of Alzheimer's Disease

We are concerned both with the Alzheimer's patients and with their families. The patient is going through a tragic development in his or her life, but so are family members and friends. In fact, beyond the midpoint in the evolution of the disease, it is probably the spouse rather than the patient who should receive the greatest attention from physicians. As the disease progresses, patients with Alzheimer's are no longer fully conscious of the ravages of the disease. Their spouses are aware of the losses they have sustained. They face the overwhelming task of caring for a fatally sick person and coping with a radical change in their own lives. The problem is compounded by the usual age at which the tragedy unfolds (most Alzheimer victims are elderly and so are their close relatives) and by the slow course of the condition. Complications for relatives often include depression. Family members often need supportive psychotherapy and specific medications; they always need compassion.

In the early phases of the disease, it is possible to change the patient's environment in such a way that prompting or even card-cueing can compensate for a weakened memory system. Excessive stimulation which usually worsens the condition can be reduced. Specific medications can be used to lower states of anxiety and agitation. Proper nutrition and exercise, as well as occupational therapies, also help significantly. Despite these efforts, at this juncture, there is no specific drug that is curative or even palliative for Alzheimer's disease. This sad reality must be faced upfront.

Research A Must

There must be great emphasis on research by those who can assist with, perform or support investigations. This problem is not going

Dr. Antonio Damasio is head of the U. of I. Alzheimer's Disease Research Center and the Department of Neurology in the College of Medicine.

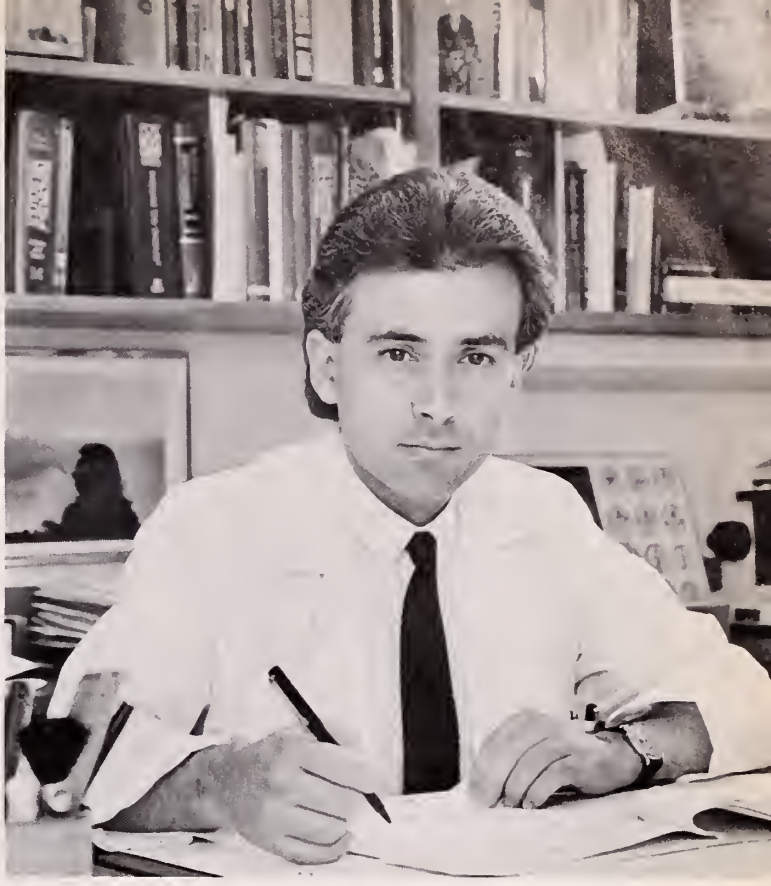
to vanish or be solved without an understanding of the causes and mechanisms that make it appear. This is no different from most tragic diseases that have plagued mankind throughout history, some of which have been successfully modified by understanding their physiopathology and developing prevention or treatment modalities.

Current research is leading us to different stages in a concerted approach to the disease. Some of it helps us develop diagnostic tools for Alzheimer's disease. We have seen development of a neuropyschological test battery to detect early mental decline. The battery, first published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, has been well accepted. Close to 200 geriatric practitioners now use this instrument to detect the kind of mental decline that should lead to a neurological referral.[1]

Previously, we had developed a way to analyze computerized tomography (CT) images and distinguish patients with dementia from those with age-related cerebral atrophy. This was accomplished with a computer program that provides ratios between the surface areas of the cerebral ventricles and the surface area of the entire cerebrum at each CT level.[2] Dr. Hanna Damasio and her colleagues, authors of this approach, are now in the process of adapting the method to the more modern magnetic resonance imaging (MRI), which is becoming a mainstay in the diagnosis of Alzheimer's disease.

The Center has also been successful in identifying what appears to be a pathognomonic sign of Alzheimer's disease through a special procedure called single photon emission tomography (SPET). Using this procedure, Drs. Hanna Damasio, Peter Kirchner, Karim Rezai, Dan Tranel and Neill Graff-Radford have identified a brain region persistently low in cerebral blood flow values in patients with Alzheimer's disease but not in normal controls.

This is one of several areas in which Drs. Van Hoesen, Hyman and I have identified the clear-cut pathology mentioned above. We have a convergence of results obtained with different methods. In one instance, a radiologic procedure performed in living human beings; in another, microscopic studies in brain tissue obtained at post-mortem. Radiological results are important because they can be used as a diagnostic test.



Antonio Damasio, M.D.

We hope more corroborative evidence will enable us to propose this procedure as a rapid and confirmatory test of the presence or absence of Alzheimer's disease in individuals suffering from progressive mental decline.

There are important new findings in other areas. Perhaps the most rewarding neuroanatomical findings confirm the early results we had published in SCIENCE.[3] Drs. Van Hoesen and Hyman have now confirmed all patients with Alzheimer's disease have specific early lesions in the cortex of the temporal lobe, a region entirely dedicated to memory acquisition. The damage in Alzheimer's disease is so selective it involves only certain types of nerve cells in certain layers of the cortex. These lesions do not occur in control subjects — that is, they are absent from the brains of other elderly individuals who are neuropsychologically intact or have dementia of different causes.[4]

It has also been discovered the nervous pathway that connects these selectively damaged cortical cells to the hippocampal formation — the main computer that performs crucial operations so memory acquisition can take place — is degenerated. We have found that

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myelin, the substance serving as the insulation from nerve fibers, has been literally demolished in this pathway, known as the perforant pathway. The findings have just been published in the ANNALS OF NEUROLOGY.[5]

Other Helpful Discoveries

An even more exciting discovery concerns the neurochemical substance, or mediator, which the perforant pathway utilizes in order to do its communication job. The mediator is glutamate, which we found to be reduced by over 80% in the terminal region of the pathways of Alzheimer's patients. Thus, we have identified a chemical substance that is missing as a result of disease striking in the selected set of nerve cells. This finding adds an important element to the description of the pathologic process of Alzheimer's disease and opens new possibilities in the search for a common cause of the condition in nerve cells involved in the production of glutamate. These results will be presented to the Society of Neuroscience this fall.[6]

We have identified another interesting phenomenon in Alzheimer's disease: preservation of the ability to learn new motor skills in patients who are otherwise ravaged by learning and memory losses. We have found patients in early and moderate stages of Alzheimer's disease can learn a motor task but do not remember having learned it. At the same time, they are completely unable to learn a new word or a new face.[7] The finding is important for several reasons. It indicates memory processes are not all alike and that not all are dependent on the same brain structure. The memory type used for words and faces ("declarative" memory), is different from that used for motor or perceptual skills ("procedural" memory). The finding also indicates not all is lost in the disastrous panorama of Alzheimer's disease. Something is preserved that might be used for appropriate therapeutic procedures. We are considering harnessing this residual ability of Alzheimer's patients for development of rehabilitation programs that will give emphasis to motor behaviors, rather than activities that rely on memory for words, objects or events.

Yet another result of our studies has to do with the fact that areas outside of the hippocampal system are involved in Alzheimer's disease. We have now clearly identified areas in the brain's temporal, occipital and parietal regions that are clearly involved in the disease process and are also related to memory processes. These results will appear soon in JOURNAL OF NEUROSCIENCE.[8]

The Research Goes On

Research at the Center will continue along all lines that have proven productive. We have a long way to go in mapping the brain systems involved in this disease. Identifying those systems is a priority. By doing so, it will be possible to understand, at a neural systems level, how the disease first strikes the brain and how it spreads. At the same time, by understanding the different neural systems, it will be possible to focus on specific nerve cell types and explore the reasons why those cell types are affected and others are manifestly spared. We are now using a monoclonal antibody extracted from brains of Alzheimer's patients. This antibody selectively binds to nerve cells that will, later on, be attacked by the disease. This specific antibody tells us that something is already amiss in those otherwise normal appearing cells.

Conducting research of this type requires substantial financial support. There is never enough money for the ideal research program that would meet our highest goals. We have, however, extensive support from the National Institute of Neurological and Communicative Disorders and Stroke, the Mathers Foundation, the Spastic Research Foundation and from several private groups and individuals. Contributions from private individuals, often from the relatives and friends of Alzheimer victims, reveal the generosity of the public and awareness of this tragic condition.

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Long-term Care — An Impending Crisis

JAMES E. ROHRER, PH.D. and
SAMUEL LEVEY, PH.D.
Iowa City, Iowa

Experts agree the growing number of elderly people will eventually translate into a shortage of long-term health care services. These authors discuss future care needs of Iowa's elderly population and the most viable alternatives for meeting those needs.

A CRISIS IN LONG-TERM CARE services looms on the horizon. By the year 2000, the aged population of the United States will be 37.1% higher than it was in 1980.[1] Over 13% of Americans will be over 65; 14.6% of Iowans will be over 65. The over-65 population in Iowa is projected to be over 434,000 by the year 2000; over 50,000 Iowans will require care assistance because of physical disability (Table 1). There is no way to estimate the number of individuals who will need long-term care because of mental disabilities. It is imperative Iowa health planners and community organizations confront the impending increase in the need for long-term care services.

Dr. Rohrer is an assistant professor in the Graduate Program in Hospital and Health Administration at the University of Iowa. Samuel Levey is head of the UI Graduate Program in Hospital and Health Administration and acting director of the UI Center for Health Services Research.

Long-term care needs of Iowans are met through a variety of mechanisms. Nursing homes, home health agencies, retirement centers with affiliated nursing homes, visiting nurses organizations, hospital swing bed programs and the efforts of family members form a complex and, unfortunately, uncoordinated array of services. It is not surprising the accessibility of these services is often problematic.

A home care patient must require skilled services to qualify for Medicare reimbursement. Medicaid programs also emphasize skilled care; although home care is covered in every state under this program, only 9 states cover personal care services.[2] Throughout the country, less than 10% of those requiring assistance with daily activities have paid helpers.[3] This reflects the low average income of the over-65 population: $7,505 in 1984.[4]

When the aged find private purchase of home care unavoidable, they also find it costly. High out-of-pocket expenses for home care are clearly associated with high risk for admission to a nursing home. The reason is obvious: when aged persons in need of home care exhaust their personal resources they are forced to rely on Medicaid, which is intended to pay for institutional care. After a few months without needed home care, the individual is likely to need nursing home care.

A series of Congressional decisions regarding financing of long-term care services has made nursing home care the key component of the long-term care system. This is unlikely to change in the short run because of reluctance to create new support systems that *may*

(Please turn to page 463)

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		0-4 months	0-8 months	0-12 months	No. patients
USA[1]	ranitidine 150 mg h.s.	9%	14%*	16%†	60
	cimetidine 400 mg h.s.	23%	34%	43%	66
UK, Ireland, Australia[2]	ranitidine 150 mg h.s.	8%‡	14%‡	23%‡	243
	cimetidine 400 mg h.s.	21%	34%	37%	241

*p=0.02
†p=0.01
‡p≤0.004
%=life-table estimates
All patients were permitted prn antacids for relief of pain.

These two trials used the currently recommended dosing regimen of cimetidine (400 mg h.s.) and ranitidine (150 mg h.s.). A comparison of other dosing regimens has not been studied.

The studied dosing regimens are not equivalent with respect to the degree and duration of acid suppression or suppression of nocturnal acid.

The superiority of ranitidine over cimetidine in these trials indicates that the dosing regimen currently recommended for cimetidine is less likely to be as successful in maintenance therapy.

Convenient once-a-night dose with a

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Headache, sometimes severe, seems to be related to ranitidine administration. Other side effects have been reported; for a complete listing, see the **ADVERSE REACTIONS** section in the Brief Summary.

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See next page for references and
Brief Summary of Product Information.

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One tablet at bedtime for maintenance therapy in healed duodenal ulcer patients

References:

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ZANTAC® 150 Tablets
(ranitidine hydrochloride)
ZANTAC® 300 Tablets
(ranitidine hydrochloride)

BRIEF SUMMARY OF PRODUCT INFORMATION

See complete product information before prescribing. The following is a brief summary

INDICATIONS AND USAGE: ZANTAC® is indicated in:
1. Short-term treatment of **active duodenal ulcer**. Most patients heal within four weeks.
2. **Maintenance therapy** for duodenal ulcer patients at reduced dosage after healing of acute ulcers.
3. The treatment of **pathological hypersecretory conditions** (eg, Zollinger-Ellison syndrome and systemic mastocytosis).
4. Short-term treatment of **active, benign gastric ulcer**. Most patients heal within six weeks and the usefulness of further treatment has not been demonstrated.
5. Treatment of **gastroesophageal reflux disease (GERD)**. Symptomatic relief commonly occurs within one or two weeks after starting therapy. Therapy for longer than six weeks has not been studied.

In active duodenal ulcer, active, benign gastric ulcer; hypersecretory states; and GERD, concomitant antacids should be given as needed for relief of pain.

CONTRAINDICATIONS: ZANTAC® is contraindicated for patients known to have hypersensitivity to the drug.

PRECAUTIONS: General: 1. Symptomatic response to ZANTAC® therapy does not preclude the presence of gastric malignancy. 2. Since ZANTAC is excreted primarily by the kidney, dosage should be adjusted in patients with impaired renal function. Caution should be observed in patients with hepatic dysfunction since ZANTAC is metabolized in the liver.

Laboratory Tests: False-positive tests for urine protein with Multistix® may occur during ZANTAC therapy, and therefore testing with sulfosalicylic acid is recommended.

Drug Interactions: Although ZANTAC has been reported to bind weakly to cytochrome P-450 in vitro, recommended doses of the drug do not inhibit the action of the cytochrome P-450-linked oxygenase enzymes in the liver. However, there have been isolated reports of drug interactions which suggest that ZANTAC may affect the bioavailability of certain drugs by some mechanism as yet unidentified (eg, a pH-dependent effect on absorption or a change in volume of distribution).

Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no indication of tumorigenic or carcinogenic effects in lifespan studies in mice and rats at doses up to 2,000 mg/kg/day.

Ranitidine was not mutagenic in standard bacterial tests (*Salmonella, E coli*) for mutagenicity at concentrations up to the maximum recommended for these assays.

In a dominant lethal assay, a single oral dose of 1,000 mg/kg to male rats was without effect on the outcome of two matings per week for the next nine weeks.

Pregnancy: *Teratogenic Effects: Pregnancy Category B:* Reproduction studies have been performed in rats and rabbits at doses up to 160 times the human dose and have revealed no evidence of impaired fertility or harm to the fetus due to ZANTAC. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: ZANTAC is secreted in human milk. Caution should be exercised when ZANTAC is administered to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Use in Elderly Patients: Ulcer healing rates in elderly patients (65 to 82 years of age) were no different from those in younger age groups. The incidence rates for adverse events and laboratory abnormalities were also not different from those seen in other age groups.

ADVERSE REACTIONS: The following have been reported as events in clinical trials or in the routine management of patients treated with oral ZANTAC®. The relationship to ZANTAC therapy has been unclear in many cases. Headache, sometimes severe, seems to be related to ZANTAC administration.

Central Nervous System: Rarely, malaise, dizziness, somnolence, insomnia, and vertigo. Rare cases of reversible mental confusion, agitation, depression, and hallucinations have been reported, predominantly in severely ill elderly patients.

Cardiovascular: Rare reports of tachycardia, bradycardia, and premature ventricular beats.

Gastrointestinal: Constipation, diarrhea, nausea/vomiting, and abdominal discomfort/pain.

Hepatic: In normal volunteers, SGPT values were increased to at least twice the pretreatment levels in 6 of 12 subjects receiving 100 mg qid IV for seven days, and in 4 of 24 subjects receiving 50 mg qid IV for five days. With oral administration there have been occasional reports of reversible hepatitis, hepatocellular or hepatocanalicular or mixed, with or without jaundice.

Musculoskeletal: Rare reports of arthralgias.

Hematologic: Rare reports of reversible leukopenia, granulocytopenia, thrombocytopenia, and pancytopenia.

Endocrine: Controlled studies in animals and man have shown no stimulation of any pituitary hormone by ZANTAC and no antiandrogenic activity, and cimetidine-induced gynecomastia and impotence in hypersecretory patients have resolved when ZANTAC has been substituted. However, occasional cases of gynecomastia, impotence, and loss of libido have been reported in male patients receiving ZANTAC, but the incidence did not differ from that in the general population.

Integumental: Rash, including rare cases suggestive of mild erythema multiforme, and, rarely, alopecia.

Other: Rare cases of hypersensitivity reactions (eg, bronchospasm, fever, rash, eosinophilia) and small increases in serum creatinine.

DOSAGE AND ADMINISTRATION: Active Duodenal Ulcer: The current recommended adult oral dosage is 150 mg twice daily. An alternate dosage of 300 mg once daily at bedtime can be used for patients in whom dosing convenience is important. The advantages of one treatment regimen compared to the other in a particular patient population have yet to be demonstrated.

Maintenance Therapy: The current recommended adult oral dosage is 150 mg at bedtime.

Pathological Hypersecretory Conditions (such as Zollinger-Ellison Syndrome): The current recommended adult oral dosage is 150 mg twice a day. In some patients it may be necessary to administer ZANTAC® 150-mg doses more frequently. Doses should be adjusted to individual patient needs, and should continue as long as clinically indicated. Doses up to 6 g/day have been employed in patients with severe disease.

Benign Gastric Ulcer: The current recommended adult oral dosage is 150 mg twice a day.

GERD: The current recommended adult oral dosage is 150 mg twice a day.

See full prescribing information for dosage adjustment for patients with impaired renal function.

HOW SUPPLIED: ZANTAC® 300 Tablets (ranitidine hydrochloride equivalent to 300 mg of ranitidine) are yellow, capsule-shaped tablets embossed with "ZANTAC 300" on one side and "Glaxo" on the other. They are available in bottles of 30 (NDC 0173-0393-40) and unit dose packs of 100 tablets (NDC 0173-0393-47).

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increase total health care costs. Thus, ensuring an adequate supply of nursing home beds is critical.

If the supply of nursing home beds does not change in the next 15 years, Iowa will still have far more beds per 1,000 aged than the national average (Table 2). In light of the anticipated need for personal care, however, a serious shortage of long-term care services will occur within the next 20 years if nursing home services are not supplemented by home care or other alternatives. If the present supply of nursing home beds does not change, there will be enough beds to accommodate only 64% of the physically dependent population in Iowa. This assumes 36% of the physically dependent and 100% of those mentally impaired but not physically dependent will have access to some kind of community-based long-term care services.

Unfortunately, the assumption that community care will be accessible is unrealistic given the eligibility requirements and service restrictions of existing public programs.

Even with the sketchy information available it is likely, without a dramatic increase in available long-term care services, there will be serious access problems in Iowa by the year 2000 due to limitations on financing of community-based care.

TABLE 1

PROJECTED POPULATION, UNITED STATES AND IOWA, 2000 (in thousands).

	United States		Iowa	
	Number	Percent	Number	Percent
Total	267,990	100.0	2,965	100.0
Under 65	232,954	86.9	2,530.9	85.3
65-74	17,693	6.6	208	7.0
75 and over	17,343	6.5	226.1	7.6
Total over 65	35,036	13.1	434.1	14.6
Papulotion requiring personol care*	4,528.2	1.7	54.3	1.8

* Estimated from rates presented in Weissert, W.G.: Estimating the long-term care population: Prevalence rates and selected characteristics. Health Care Financing Review 1985;6(4):83-91.

TABLE 2

SUPPLY OF NURSING HOME BEDS, UNITED STATES AND IOWA, CURRENT AND PROJECTED

	United States	Iowa
Current Supply		
Total Nursing Home Beds	1,537,338	34,641
Beds per thousand persons over 65	60.2	89.5
Beds per dependent person*	0.45	0.78
Supply in 2000		
Beds per thousond persons over 65	43.9	79.8
Beds per dependent person*	0.34	0.64

* Population requiring personal care (i.e., dependent in at least one activity of daily living) from Table 1 divided into current bed supply.

Laissez Faire

In the United States, government action is usually considered only after the private sector has proven itself incapable of solving a major social problem. Given the libertarian bent of American political culture, it is necessary to explore the laissez faire approach to the looming long-term care crisis.

A non-interventionist long-term care policy assumes the market will respond to the needs and wants of long-term care clients with increases in supply. According to this theory, if people want home care the market will provide it.

Realistically, we cannot assume increased need for long-term care services will be followed by corresponding increases in economic demand for those services. "Demand" results from ability to pay, as well as the perceived need for services. Since need for long-term care is usually tied to reductions in earning power, without public assistance the disabled aged cannot "demand" as many long-term care services as they need.

The demand for long-term care services increased when the Social Security Act was enacted and increased more dramatically when the Kerr-Mills program (the precursor to Medicaid payment for nursing home services) was implemented. It mushroomed when Medicare and Medicaid were established, after Congress had concluded the income or savings of those in need of long-term care services were too low to generate sufficient economic demand. Even in our affluent condition there is little reason to believe the aged will have sufficient resources to purchase the personal care services they require unless government assistance programs are expanded.

(Please turn to page 464)

Demand-side Solutions

One way to address deficiencies in the long-term care marketplace is to increase the purchasing power of individuals who require care. Two vehicles to accomplish this are public and private insurance programs to provide enhanced long-term care benefits. While voluntary, private long-term care insurance is a popular concept, it is extremely unlikely it will obviate the need for a substantial public program. Public programs will always be needed; the temptation to rely on government largesse will also always be present. For private, voluntary long-term care insurance to coexist with public insurance is, in a sense, a penalty for the self-sufficient, responsible individual. However, sorting out those who could have prepared for their long-term care requirements from those who couldn't is fraught with ethical dilemmas.

Compulsory private insurance would not solve the financing problem since it would be handled principally through employers. Furthermore, many of the individuals who will be users of long-term care services in the future are already retired and may not have the means to purchase insurance.

These considerations suggest publicly-financed long-term care must be a major feature of any strategy for increasing the accessibility of long-term care services. Existing public programs will not be sufficient because they emphasize institutional care over community care and, when they pay for home care, reimbursement is usually limited to skilled services.

> ***"The first step toward meeting the looming crisis in long term care is to organize public programs so they can function efficiently and effectively."***

Many observers of the long-term care system advocate adoption of comprehensive, compulsory long-term care insurance. One way this could be accomplished is by establishing a special long-term care trust fund to be financed through an increase in social security taxes. Yet such a proposal, *by itself*, may be prohibitively expensive. If not restricted, the supply of long-term care services would expand rapidly after adoption of such a program. While this could be desirable, such expansion of supply could be excessive. Given adequate purchasing power, people may demand long-term care services even when they have little need for them. It has often been noted that the occupancy rate of nursing homes is high in all states, regardless of the number of beds available.[5] Adoption of comprehensive public financing of long-term care must be accompanied by a mechanism for rationing those services.

Organizational Changes

The solution may be to reorganize the way long-term care is delivered.[6, 7, 8] Health Maintenance Organizations (HMOs) have been heralded as the salvation of the acute health care system; others have touted comprehensive case management or social/health maintenance organizations (S/HMOs) as the best mechanism for meeting the needs of the aged. By matching the needs of the individual with an array



of social and health services, S/HMOs cut through the demarcations between existing public programs. Another innovative organization which blurs distinctions between social and health care programs is the retirement community with self-contained health care services. Physical proximity, combined with broad organizational responsibilities, permits an orderly transition through independent living, assisted living and institutionalization.

Unfortunately, these organizational innovations have not yet proven themselves. The costs and benefits of such programs in different settings is unknown. It is impossible to predict whether any of them will be successful in Iowa.

Active Government

There is only one type of long-term care policy which can begin to resolve the dilemmas facing the long-term care system: a coordinated financing, planning and control effort. Comprehensive financing must include an effort to estimate the quantities of various types of needed services, to match the needs of the aged with appropriate levels of care and a serious commitment to quality control. The agency must have the flexibility to encourage organizational innovations and permit their reimbursement. While such an agency would require unprecedented statutory authority, this would represent consolidation of existing authority into a single agency rather than an extension of governmental authority.

The first step toward meeting the looming crisis in long-term care is to organize public programs so they can function efficiently and effectively.

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Supporting Family Caregiving

KAREN FREDA, M.S.W.
Moline, Illinois

Who is caring for America's elderly? The American family. The National Center for Health Statistics estimates 39% of older people are limited in major activity, but only 5% live in nursing homes. For every elderly person in a nursing home, there are 2 elderly people in the community who need similar care. Here, Karen Freda, executive director of ALTERNATIVES for the Older Adult, Inc., Moline, Illinois, discusses the role of the family caregiver.

ALTHOUGH MANY PEOPLE believe family care is a thing of the past, most care given to older people comes from family members. According to a 1982 study, formal services such as paid providers of home health, homemaker/chore services and adult day care programs accounted for less than 15% of care to older people in the community. Remaining care was given by spouses, offspring and other relatives. Thirty-seven percent of males are cared for by spouses, 24% by offspring, 23% by another relative and 16% by formal paid providers. Ten percent of females are cared for by spouses, 34% by offspring, 35% by other relatives and 21% by formal sources.*

Although families have always cared for aged members, societal trends have increased this responsibility. The proportion of older people is increasing. There are more older relatives for fewer younger adults. More older adults in their sixties are caring for aged parents, who are living to 80 or 90. Due to the mobility of our population, caregiving may fall to members who live close to the aged person. More women are in the workforce and are less able to be traditional caregivers.

Within the family unit, a primary caregiver is usually designated. The level of care and responsibility may range from a few hours a week to 24-hour supervision. The family responds out of love and respect for the disabled individual, but caregiving can be an overwhelming and fatiguing experience if caregivers have no support, guidance and respite.

Older people generally prefer to remain as independent as possible. Families are willing to provide care for relatives, but are limited by other obligations. Care for an older person at home means several adjustments. Changes occur in meal schedules, privacy and sleeping arrangements. The caregiver's role may put additional stress on family finances due to nonreimbursed supplies, medications or assistance.

The change in family roles may increase emotional strain. Children become nurturers for elder parents. Female spouses may be forced to assume more responsibility for decisions and money management. Male spouses may assume more domestic responsibilities. Additional emotional stress may result from

*Health Care Financing Review, 1985.

being a member of the "sandwich" generation; midlife adults who care for their children and their parents. Many families are torn by guilt when trying to meet these responsibilities.

Spouses, especially wives, are often primary caregivers. The physical demand of caregiving can be a source of stress. Caregivers are called on to lift, dress, bathe, transfer and stabilize. For most women, this means assisting someone who is physically larger. This may be unrealistic for women with chronic diseases. Caregivers are socially isolated because they cannot leave the homebound spouse. Health professionals and families tend to focus on the needs of the ill person and overlook the impact of caregiving on the caregiver's health. Despite the stress, caregiving can be a rewarding experience. A new closeness can develop between family members.

Organizations and professionals can take an active role in supporting family caregivers. The physician is in a unique position to assist caregivers by identifying caregiving situations, evaluating the health of the caregiver and making appropriate referrals.

Support begins with evaluation and care planning. The scope of the evaluation often focuses solely on the patient. It is important to discuss the illness and health regimes with the family caregiver. This conversation reduces the family's feeling of helplessness and enables the physician or nurse to evaluate the emotional and physical well-being of the caregiver. The caregiver should be urged to have a physical if there are indications of problems.

Factors to be considered in a caregiving situation include how long care has been provided, commitment of family members, indications of the quality of care given, availability of respite, and sudden changes in amount of care required or health of caregiver. Because of the additional stresses, the health of elder caregivers providing heavy care should be closely monitored. Caregivers can wear out and die before their mates.

Knowing where to look for assistance is a problem facing many families. Many states have developed case management systems which provide impaired individuals and their families access to community-based health and social services. This program is available in some Iowa counties. Information about these services is available from the Area Agency on Aging. Each community has a different service pattern. Support Services offered to caregivers include self help groups, counseling, caregiver respite, day care, home nursing and homemaker services.

TWO DILEMMAS

Her children are grown; she and her husband are making plans for living alone again. Her elderly mother begins demanding more care and attention than the previous 7 hours a week. The daughter becomes the protector and nurturer of her mother. She is faced with the decision of nursing home placement or sharing a residence.

A husband attempts to provide 24-hour care for his wife, who is wheelchair-bound and aphasic. He experiences increased difficulty in transferring her as a result of his own chronic diseases. He feeds, dresses, transfers and toilets her with care. He promised he will never take her to a nursing home; but he is exhausted and has to place her temporarily. He misses her terribly and plans for her to return home soon.

Physicians and nurses can provide additional support by preparing the caregiver for their new role. *Home Care, A Practical Alternative to Extended Hospitalization* by Evelyn Baulch and *The 36-Hour Day* by Nancy Mace and Peter Rabins, M.D. are excellent resources. *The 36-Hour Day* describes behavioral management techniques used in caring for individuals who have dementia. General guidelines are:

- Develop guidelines at the start for a new living arrangement.
- Attempt to view a situation from the patient's perspective.
- Keep communication open; deal with frustrations quickly.
- Avoid condescending speech. The elder may be physically impaired, but he/she is not a child.
- Allow for the greatest level of independence and decision making.

(Please turn to page 468)

- Use other family members or formal services for respite and household duties. This will allow you to provide better care.
- Maintain outside interests and time alone.
- Use relaxation techniques and mini-breaks to make up for lost sleep.
- Keep a record of health regimes and care provided.
- Set up the room for convenience in providing care. Medical equipment in the home can increase the patient's independence and make transferring easier. Keep supplies in handy locations.
- Realize the patient may not get better despite the quality of your care. Express your grief and frustrations with friends, counselor or support group.
- Accept help.

The American family plays a substantial role in caring for our nation's elderly. Because of the family bond, the care that the family can provide is, in some respects, preferable to care given by formal providers. However, caregiving places new stresses and demands upon families. Health and service providers should be aware of the needs of the caregivers and be more responsive to supporting their role. It is important to evaluate the capabilities of the caregiver, to provide the caregiver with education and training on health regimes, and evaluate the appropriateness of the length of the caregiving situation. In some situations, it may be unrealistic for families to continue to attempt the provision of care.

The needs of the caregiver must also be addressed. The physical and mental health of the caregiver must be monitored regularly, especially if the caregiver is an older person providing heavy care. The emotional aspects of caregiving can be addressed by referring to self-help groups, counseling and respite services such as day care, home health and homemaker. By providing supports for the caregiver, health providers can enhance the quality of home care for the patient and family.

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QUESTIONS AND ANSWERS



Issues of Concern to Elderly

Affordable health care, long term care insurance and adequate housing are among the many complex issues facing Iowa's elderly population. They are issues of great concern to the Iowa Department of Elder Affairs, formerly the Iowa Commission on the Aging. Here, Karen L. Tynes, Executive Director of the Department, discusses issues and answers for Iowa's elderly.

Due to government reorganization, the Iowa Commission on the Aging is now called the Iowa Department of Elder Affairs. What are the responsibilities and activities of your Department in the wake of reorganization?

Reorganization of state government has given Iowa's elders a Department with increased responsibilities and a new focus on the future. However, elders will see few changes in programs administered locally by area agencies on aging. The Department is responsible for planning, coordination and development of programs for elders and advocacy on behalf of elders.

The Department's statutory requirements — particularly in the area of long term care services — are greater than before. The executive director of the Department is now a member of the Health Data Commission, an organization charged with collecting long term care data. Legislation also creates a Long Term Care Coordinating Unit consisting of the Commissioner of Human Services, the Director of Public Health and the Executive Director of the Department of Elder Affairs. The purpose of this unit is to address the complicated issues of a comprehensive long term care delivery system.

The Department also administers state funds for the Retired Senior Volunteer Program. Our newest program is education and training of family caregivers for Alzheimer's victims.

What other new projects is the Department of Elder Affairs conducting?

Elder abuse is of great concern to the Department. We are participating in a task force recently appointed by the Governor to study this problem.

The Department is also compiling data from its housing market survey and promoting the use of Elder Cottages as alternative housing. In addition, we are working with the Insurance Commissioner to review and publish information on Iowa's numerous Medicare Supplemental policies.

What are the most critical issues facing Iowa's elderly population? What is your Department doing in these areas?

The most critical issues facing Iowa's elderly are accessible, affordable and quality health care, adequate income, adequate and affordable housing and the use of elders as a valuable resource. The Department is also concerned about wellness programs, health promotion and the impact rural Iowa's economic difficulties will have on elders. Support for families

(Please turn to page 477)



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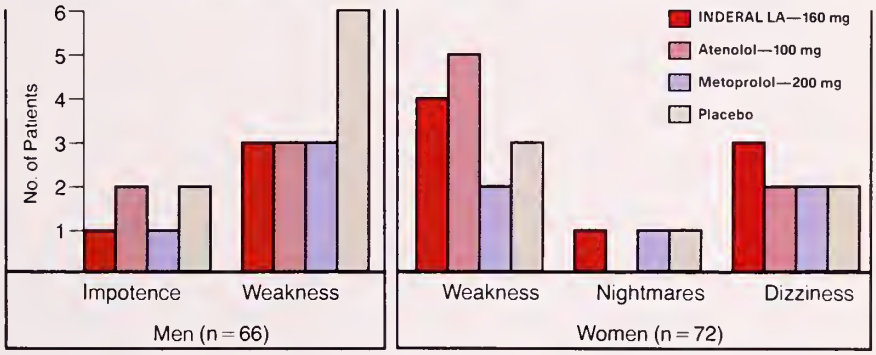
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CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma; 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)— PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL: Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS: Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular. Bradycardia, congestive heart failure, intensification of AV block, hypotension; paresthesia of hands; thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System. Lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances; hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal. Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation; mesenteric arterial thrombosis, ischemic colitis.

Allergic. Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory. Bronchospasm.

Hematologic. Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune. In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous. Alopecia, LE-like reactions; psoriasiform rashes, dry eyes; male impotence; and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal. Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation; jaundice (intrahepatic cholestatic jaundice); pancreatitis; sialadenitis.

Central Nervous System. Dizziness, vertigo; paresthesias, headache; xanthopsia.

Hematologic. Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia.

Cardiovascular. Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity. Purpura, photosensitivity, rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other. Hyperglycemia, glycosuria, hyperuricemia, muscle spasm; weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

* The appearance of these capsules is a registered trademark of Ayerst Laboratories

REFERENCE:

1. Ravid M, Lang R, Jutrin I. The relative antihypertensive potency of propranolol, oxprenolol, atenolol, and metoprolol given once daily. *Arch Intern Med* 1985;145:1321–1323.

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Falls In The Elderly

STANLEY M. HAUGLAND, M.D.,
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JAMES R. GILSON, M.D.

The elderly become increasingly unsteady on their feet. Their falls can and do take a heavy toll. Iowa physicians need to know and emphasize among patients how to avoid falls. This is the third in a series of geriatric presentations presented by the Iowa Medical Society Committee on Aging and Chronic Illness.

FALLS OCCUR frequently among the elderly. Such occurrences interrupt independent living and force long-term institutionalization. The problem of falling is correctable or preventable in significant numbers of patients, but only if there is appropriate intervention at an early stage before severe injury has occurred.

The authors are members of the Iowa Medical Society Committee on Aging and Chronic Illness. Dr. Haugland is medical director, Younker Gerontology Project, Iowa Methodist Medical Center, Des Moines, Iowa. Dr. Williams is associate professor of family practice, The University of Iowa College of Medicine, Iowa City, Iowa. Dr. Smith is professor of internal medicine, The University of Iowa Hospitals and Clinics, Iowa City, Iowa. Dr. Gilson is in the private practice of internal medicine (cardiology) in Davenport, Iowa.

Incidence

Although injuries are more common in younger age groups, falling injuries among those over 65 years of age are more often fatal.[1] Falls cause 95% of injuries in the elderly. The problem increases with age, and 75% of fatal falls are experienced by people over 75.[2] Falls are the sixth leading cause of death in people 65 years and older (Table I).

Those elderly whose physical activity is limited fall more often than those who are mobile. Women fall twice as often as men, but their falls are less likely to be fatal. Those using assistive devices because of debility fall the least, which suggests there may be ways to reduce falls among the more debilitated.[4] Poor vision is a significant factor in the incidence of serious injury after a fall. Interestingly, the blind elderly fall less than their sighted cohorts.[5]

Time and Place

In long-term care institutions, 55% of falls occur in bedrooms, 19% in recreation or dining areas, and, surprisingly, only 8.3% in bathrooms.[6] In the home, the majority of falls occur in living areas, where most time is spent. Falls are most likely to occur in institutions at times of peak activity or when few staff are on duty.[7, 8] There is some evidence that a disproportionate number of falls occur during the first week an elderly individual is in a new environment, particularly an acute hospital.[9]

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF OCTOBER 1986

TABLE I
DEATH RATE FROM FALLS[3]

Generol Populotion = 57 deoths/10,000	
Ages	Deoths
65-75	93/10,000
75-84	210/10,000
84+	625/10,000

TABLE II
CONSEQUENCES OF FALLS IN THE ELDERLY

1. DEATH
   Immediote or deloyed
   More deoths ore due to folls thon outomobile occidents
2. MUSCULOSKELETAL INJURY
   Froctures
   Exocerbotion of orthritis
   Hemotomo, especiolly subdurol hemotomo. The broin thot is otrophic is loose in the skull, ond blood vessels ore more vulneroble to the sheoring effect coused by o blow on the heod.
   Rhobdomyolysis. Due to necrosis of muscle secondory to ischemio, porticulorly when potient lies for o long time ofter folling.[10]
3. HYPOTHERMIA MAY OCCUR IN ELDERLY AT TEMPERATURES ABOVE 60 F
4. IMMOBILIZATION
   Prolonged morbidity, pneumonio, deep vein thrombosis, muscle ond joint stiffness, controctures, decubiti, constipotion/impoction, urinory retention/incontinence, urinory troct infection, tronsfer to nursing home
5. PSYCHOLOGIC DAMAGE
   Loss of confidence, feor of folling, sociol isolotion, depression, dependency

TABLE III
EFFECTS OF AGING ON POSTURE CONTROL

1. Chonged body configurotion with oltered center of grovity
2. Muscle weokness
3. Diminished sensory input
   Vision
   Heoring
   Vestibulor function
   Proprioception
4. Centrol nervous system chonges
   Slowed mentotion
   Cerebellor function decreosed
5. Motor nerve conduction rote reduced
6. Bororeceptor response deloyed

Consequences

When older people fall, fractures commonly occur. The hip and femur are the most frequent fracture sites, followed by the radius and ulna. Only 50-67% of those individuals who survive a hip fracture are alive 1 year later; 50% of those who lie for more than 1 hour after a fall are alive 6 months later. The far-reaching consequences of falls are listed in Table II.

TABLE IV
CAUSES OF POSTURAL HYPOTENSION IN ELDERLY PATIENTS

1. Deloyed bororeceptor response on orising
2. Postprondiol hypotension[11]
   Systolic BP moy drop 25 mm Hg by 35 minutes ofter meol in patient who remoins seoted
3. Voricose veins
   500 ml of blood moy pool in old legs on stonding
4. Worm both or shower
5. Drugs
   Diuretics, digoxin, phenothiozines, tricyclics, benzodiozepines ond olcohol ore often implicoted

Causes In The Patient

Most old people are unsteady on their feet. Table III sets forth the reasons for instability. Poor postural control is aggravated by the tendency to develop postural hypotension (Table IV). In addition, the majority of elderly have multiple diseases and take several drugs to compound the problem.

Colling and Park found an average of 3 diagnoses for each fall victim.[8] The most frequently reported disorders were cardiovascular (57%), cerebrovascular (40%), musculoskeletal (40%), neurologic (29%), psychiatric (20%), and respiratory (19%). Patients in a geriatric hospital most at risk were those normally active people with a balance impairment due to a recent illness.[12]

Table V lists the medical conditions that contribute to falls. Table VI is a checklist to use when examining a patient who has fallen.

Causes In The Environment

Equipment has been implicated in 50% of falls in institutions; 30% of those falls were associated with chairs or wheelchairs.[9] An extensive study at Bellevue Hospital Center in New York by Catchen found that 36% of falls associated with beds, mostly during attempts to get in or out.[9] Significantly, Catchen also found the side rails were up in every fall from bed during sleep. Wheelchair accidents were second in frequency (28%) and were mostly the result of not locking the wheels. Assistive

TABLE V
SOME CAUSES OF FALLS IN THE ELDERLY PATIENT

I. MEDICAL CONDITIONS
  A. Acute
    1. Cardiovosculor
       Cardioc dysrhythmio; Syncape, e.g., micturition syncope; Myocordiol infarction; Pastural hypotensian.
    2. Cerebrovoscular
       Vertebro-basilor ortery syndrome; Drap ottock;[13] Subclavion steal; Stroke; Tronsient ischemic attock.
    3. Metabolic
       Electralyte imbolance, e.g., hypakolemio; Hypo- and hyperglycemio; Dehydrotion.
    4. Infection
       Pneumonio; Influenza; Urinary tract infection; Viral labyrinthitis.
    5. Other
       Recent ocute illness; Stress fracture; Gostrointestinal bleed
  B. Chronic
     Arthritis, e.g., cervical spondylosis; Hypertension; Diabetes with neuropothy; Congestive heart foilure; Hypothyraidism; Debility, e.g., corcinomo, nutritionol deficiency, onemia; Neurologic disease, e.g., parkinsonism, dementio, stroke; Defective vision ond heoring.
II. MOOD AND BEHAVIOR
  Anxiety; Depression; Impoired judgment.
III. Drugs
  A. Cordiovosculor drugs
     Diuretics;* Antihypertensives; Digaxin.
  B. Centrol nervous system drugs
     Alcohol; Phenothiozines; Tricyclics; Benzodiozepines.

*Diuretics have been implicated in falls mare than any ather closs of drug.

TABLE VI
PHYSICAL EXAMINATION OF PATIENT WHO HAS FALLEN

Shauld include the following: Sternol pressure test; Muscle strength; Visian; Hearing; Nystagmus; Mental status, mood; Gait, stance; BP sitting ond standing; Cervicol bruits; Cervical spine; Signs of neurapothy; Signs of intercurrent illness.

TABLE VII
PREVENTION OF FALLS

1. Educote the potient
2. Educate the fomily
   Discouroge overprotectian
3. Promate activity
   Restore balonce and mability eorly ofter acute illness; Prescribe short caurse of physicol therapy.
4. Prescribe wolking aids correctly
   Measure cone from wrist creose.
5. Modify the environment
   Lower bed height; Increose lighting; Remave abstocles; Recommend laterol support shoes instead of slippers.
6. Install alerting devices
   Lifeline ($10/month); Telephone in living raam.
7. Reduce drugs
   Choose drugs thot da not lower blood pressure ar make potient less awore of surraundings.

devices that are not correctly prescribed may contribute to falls. Of 24 elderly patients who fell while using walking sticks, 18 had walking sticks of the incorrect length.[14] Fallers often say that they trip over pets, cords or throw rugs. Poor illumination can lead to a fall, even in the familiar environment of the patient's home. However, in a study of 125 people over 65 who fell at home, Wild *et al* identified only 9 falls in which the environment played a part.[15]

Prevention

It is estimated that 25% of falls in the elderly can be prevented, 50% of falls may be prevented, and 25% cannot be prevented. A remarkable patient education prevention program in an Israeli home care unit led to a 72% reduction in the incidence of falls over a 6-month period. Many participants reduced their use of drugs and made repairs and alterations in their homes.[16] Other suggestions for preventing falls in the elderly are listed in Table VII.

In summary, the older a person gets the more he or she runs the risk of loss of independence, severe injury, and even death as a result of falling. Because of the effects of aging, elderly people are basically unstable and very small changes within the individual or in the environment can lead to a fall. Physicians need to be alert to the symptom of falling, to identify the causes, and to outline appropriate remedial measures. In this way we may enable some elderly fallers to improve their stability and remain independent and mobile.

References

The references noted in this paper are available either from the authors or the editors of IOWA MEDICINE.

The editors invite your comments, inquiries, and suggestions. Please address Letter to the Editor, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265.

Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



THOUGHTS WHILE CRUISING

THIRTY-FOUR YEARS AGO I was completing a tour of sea duty sailing between Seattle and Japan (Yokohoma). The ocean was often shrouded by fog, the sun and stars not visible for several days in succession. Today is much the same. Again, I am at sea. The sky is overcast, the sea is rolling but not heavy.

Fortunately, this voyage is for pleasure, not mandated by the U.S. Navy. My pleasure trip to Alaska, a state which covers such a vast territory many parts are accessible only by air or sea, caused me to reflect upon the tribulations many people must endure to live. True, there is no freeway congestion, but the challenge of a livelihood is great.

Often we passed a small fishing trawler. How dismal life must be in the vastness of the ocean with no friends close by. Their only contact is by radio. How long they remain at sea I do not know, but I was informed frequently only 2 persons are aboard.

Life is usually what we make it. For some, destiny is precluded by family ties or circumstances of employment. Some succeed handsomely, others fail miserably. Many who fail have only themselves to blame.

Our cruise took us to Glacier Bay to observe the marvels of our universe. It seemed unreal that our ship sailed upon waters left by a glacier a century ago. A glacier moves inch-by-inch and foot-by-foot over the centuries, carving a new profile upon the face of the earth, similar to our destiny during the decades of our existence. From infancy we etch a pattern on our family, later to advance into society and "make our mark."

Those of us fortunate to be physicians have the opportunity to etch a truly distinctive pattern. If our efforts fail, so also could our patients. Each of us have varying responsibilities along the pathway of life. Some are complex, others are basic. Our professional responsibilities are so vast that most people have no concept of them. Therein lies confusion or denial. Concern with life and death is formidable. Ours is a responsibility unmatched by most other professions. An architectural failure, a miscarriage of justice or a breech of contract may not threaten the life of an individual in a direct fashion. We deal with pain and suffering which may invade the hearts of all of us.

Though we seem used to facing illness, suffering and death in our professional world, some of us may be haunted by the presence of pain in one we love. Helplessness and frustration may befall us. Tension and anger may overshadow our professional demeanor. No doubt it is painful to witness the physical decline of a loved one. Attitudes may cast a shadow varying from bitterness and resentment to abject acceptance. Our training should help us cope; but, what of our patients and their families? We must be of assistance while continuing to strive for excellence in medical care and extending love to those we serve.

As I spend a week away from my professional responsibilities and view this remaining frontier of our vast land, reflection upon life is easy. In this world of technological advances, life is complicated yet simple when compared to the vicissitudes which faced those who cast their lot in Alaska only a few decades ago. The hardships of loneliness, the rugged

(Please turn to page 476)

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COMMENTING EDITORIALLY

(Continued from page 474)

way of life, and the paucity of comforts surely took its toll on many. How many of us could withstand such a way of life? Imagine a severe illness or a major accident and the closest medical service miles away accessible only by boat or foot. The coastline is rugged and formidable. Ketchikan and Sitka are isolated from land routes. Small planes fly in and out (weather permitting); yet, access by boat is the life line. The people live well and have most of the comforts we have, but at great expense. The logistics of supplying their needs are great, but much improved since the availability of airplanes.

We fret over our long hours, the threat of litigation, the complexities of the business aspects of medical practice, the rules and regulations imposed upon us by hospitals. Yet, we are not isolated from what Alaskans call the "lower states." By comparison, our life style is very good. — M.E.A.

TALKING TO YOURSELF

TALKING TO YOURSELF is considered by some to indicate senility or absent-mindedness. Yet, nearly everyone has innermost conversations at some time. It may be decision-making "Should I or shouldn't I?" Perhaps it is the subconscious giving advise before we take action. In any case, talking to yourself may be a healthy outlet to the stresses of life. I refer to self-evaluation of past, present and future. Some would call it meditation.

Many of us have over-extended ourselves at some time or another. We tend to want to do too many things. We over-commit and become over-involved. For some, doing more than would be normally expected becomes a way of life.

Oliver Wendell Holmes (1809-1894) observed that "A moment's insight is sometimes worth a life's experience." Do you ever ask yourself if a certain task is really necessary? Many endeavors are nothing more than busy work without real purpose. When we become involved in busy work, our time and talents are wasted. On the other hand, we frequently devote time for our own self-gratification. Life is but a few thousand moments. Before that last moment arrives, we must feel good about ourselves and our actions.

Negative thinking leads to prevention of true potential. Each person has untapped resources that do not necessarily lie within the primary mission in life. All of us know individuals who have talents beyond their professional expertise. It is incumbent upon them to develop those talents despite toiling slavishly on the professional life. T. S. Elliot said that "humankind cannot bear too much reality." We often see our colleagues so engrossed in their professional lives that their responsibilities to family and self suffer. Professional zeal is laudable, but isn't it a sham when the efforts are too often self-serving?

On the other hand, some of our colleagues are content to go along their way serving themselves; giving back little to their collective professional and civic societies. Often the excuse is being too busy with the practice of medicine. They have no time for committees of the hospital medical staff or their medical societies. Some do not belong to the organizations of our practice. They receive the benefits, giving nothing.

There are many facets to our professional endeavors. We are highly trained to provide health care. We are equipped to add so much to society — whether it be to civic groups, service organizations, church or professional societies. Recently the IMS House of Delegates met to ponder the needs of our profession and our patients. Numerous dedicated physicians gave of their time for 2-3 days. Committee appointees were recently announced . . . many of the same individuals willing to give unstintingly of their time and efforts.

Think upon these things, doctor. Are you giving your share to our concerted efforts to act as a responsive professional society? Take

(Please turn to page 477)

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0.3 mg 0.625 mg 0.9 mg 1.25 mg 2.5 mg

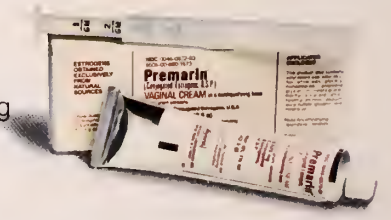
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For atrophic vaginitis

PREMARIN®
(Conjugated Estrogens)

Vaginal Cream

0.625mg/g



BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION AND PATIENT INFORMATION, SEE PACKAGE CIRCULARS.)*

PREMARIN® Brand of conjugated estrogens tablets, USP
PREMARIN® Brand of conjugated estrogens Vaginal Cream in a nonliquefying base

1 ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA

Three independent case control studies have reported an increased risk of endometrial cancer in postmenopausal women exposed to exogenous estrogens for more than one year. This risk was independent of the other known risk factors for endometrial cancer. These studies are further supported by the finding that incidence rates of endometrial cancer have increased sharply since 1969 in eight different areas of the United States with population-based cancer reporting systems, an increase which may be related to the rapidly expanding use of estrogens during the last decade. The three case control studies reported that the risk of endometrial cancer in estrogen users was about 4.5 to 13.9 times greater than in nonusers. The risk appears to depend on both duration of treatment and on estrogen dose. In view of these findings, when estrogens are used for the treatment of menopausal symptoms, the lowest dose that will control symptoms should be utilized and medication should be discontinued as soon as possible. When prolonged treatment is medically indicated, the patient should be reassessed on at least a semiannual basis to determine the need for continued therapy. Although the evidence must be considered preliminary, one study suggests that cyclic administration of low doses of estrogen may carry less risk than continuous administration, it therefore appears prudent to utilize such a regimen. Close clinical surveillance of all women taking estrogens is important. In all cases of undiagnosed persistent or recurring abnormal vaginal bleeding, adequate diagnostic measures should be undertaken to rule out malignancy. There is no evidence at present that "natural" estrogens are more or less hazardous than "synthetic" estrogens at equiestrogenic doses.

2 ESTROGENS SHOULD NOT BE USED DURING PREGNANCY

The use of female sex hormones, both estrogens and progestogens, during early pregnancy may seriously damage the offspring. It has been shown that females exposed in utero to diethylstilbestrol, a non-steroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated as not greater than 4 per 1,000 exposures. Furthermore, a high percentage of such exposed women (from 30% to 90%) have been found to have vaginal adenosis, epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are precursors of malignancy. Although similar data are not available with the use of other estrogens, it cannot be presumed they would not induce similar changes. Several reports suggest an association between intrauterine exposure to female sex hormones and congenital anomalies, including congenital heart defects and limb reduction defects. One case control study estimated a 4.7-fold increased risk of limb reduction defects in infants exposed in utero to sex hormones (oral contraceptives, hormone withdrawal tests for pregnancy, or attempted treatment for threatened abortion). Some of these exposures were very short and involved only a few days of treatment. The data suggest that the risk of limb reduction defects in exposed fetuses is somewhat less than 1 per 1,000. In the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well controlled studies that progestogens are effective for these uses. If PREMARIN is used during pregnancy, or if the patient becomes pregnant while taking this drug, she should be apprised of the potential risks to the fetus, and the advisability of pregnancy continuation.

DESCRIPTION: PREMARIN (conjugated estrogens, USP) contains a mixture of estrogens, obtained exclusively from natural sources, blended to represent the average composition of material derived from pregnant mares' urine. It contains estrone, equilin, and 17α-dihydroequilin, together with smaller amounts of 17α-estradiol, equilenin, and 17α-dihydroequilenin as salts of their sulfate esters. Tablets are available in 0.3 mg, 0.625 mg, 0.9 mg, 1.25 mg, and 2.5 mg strengths of conjugated estrogens. Cream is available as 0.625 mg conjugated estrogens per gram.

INDICATIONS AND USAGE: PREMARIN (conjugated estrogens tablets, USP): Moderate-to-severe *vasomotor* symptoms associated with the menopause. (There is no evidence that estrogens are effective for nervous symptoms or depression without associated vasomotor symptoms and they should not be used to treat such conditions.) **Osteoporosis (abnormally low bone mass).** Atrophic vaginitis. Kraurosis vulvae. Female castration.

PREMARIN (conjugated estrogens) Vaginal Cream is indicated in the treatment of atrophic vaginitis and kraurosis vulvae. PREMARIN HAS NOT BEEN SHOWN TO BE EFFECTIVE FOR ANY PURPOSE DURING PREGNANCY AND ITS USE MAY CAUSE SEVERE HARM TO THE FETUS (SEE BOXED WARNING).

Concomitant Progestin Use: The lowest effective dose appropriate for the specific indication should be utilized. Studies of the addition of a progestin for 7 or more days of a cycle of estrogen administration have reported a lowered incidence of endometrial hyperplasia. Morphological and biochemical studies of the endometrium suggest that 10 to 13 days of progestin are needed to provide maximal maturation of the endometrium and to eliminate any hyperplastic changes. Whether this will provide protection from endometrial carcinoma has not been clearly established. There are possible additional risks which may be associated with the inclusion of progestin in estrogen replacement regimens. (See PRECAUTIONS.) The choice of progestin and dosage may be important, product labeling should be reviewed to minimize possible adverse effects.

CONTRAINDICATIONS: Estrogens should not be used in women (or men) with any of the following conditions: 1. Known or suspected cancer of the breast except in appropriately selected patients being treated for metastatic disease. 2. Known or suspected estrogen-dependent neoplasia. 3. Known or suspected pregnancy. (See Boxed Warning). 4. Undiagnosed abnormal genital bleeding. 5. Active thrombophlebitis or thromboembolic disorders. 6. A past history of thrombophlebitis, thrombosis, or thromboembolic disorders associated with previous estrogen use (except when used in treatment of breast or prostatic malignancy).

WARNINGS: Long-term continuous administration of natural and synthetic estrogens in certain animal species increases the frequency of carcinomas of the breast, cervix, vagina, and liver. There are now reports that estrogens increase the risk of carcinoma of the endometrium in humans. (See Boxed Warning.) At the present time there is no satisfactory evidence that estrogens given to postmenopausal women increase the risk of cancer of the breast, although a recent study has raised this possibility. There is a need for caution in prescribing estrogens for women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms. A recent study has reported a 2- to 3-fold increase in the risk of surgically confirmed gallbladder disease in women receiving postmenopausal estrogens.

Adverse effects of oral contraceptives may be expected at the larger doses of estrogen used to treat prostatic or breast cancer or postpartum breast engorgement, it has been shown that there is an increased risk of thrombosis in men receiving estrogens for prostatic cancer and women for postpartum breast engorgement. Users of oral contraceptives have an increased risk of diseases, such as thrombophlebitis, pulmonary embolism, stroke, and myocardial infarction. Cases of retinal thrombosis, mesenteric thrombosis, and optic neuritis have been reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in users of oral contraceptives. It feasible, estrogen should be discontinued at least 4 weeks before surgery of the type associated with an increased risk of thromboembolism, or during periods of prolonged immobilization. Estrogens should not be used in persons with active thrombophlebitis, thromboembolic disorders, or in persons with a history of such disorders in association with estrogen use. They should be used with caution in patients with cerebral vascular or coronary artery disease. Large doses (5 mg conjugated estrogens per day), comparable to those used to treat cancer of the prostate and breast, have been shown to increase the risk of nonfatal myocardial infarction, pulmonary embolism and thrombophlebitis. When doses of this size are used, any of the thromboembolic and thrombotic adverse effects should be considered a clear risk.

Benign hepatic adenomas should be considered in estrogen users having abdominal pain and tenderness, abdominal mass, or hypovolemic shock. Hepatocellular carcinoma has been reported in women taking estrogen-containing oral contraceptives. Increased blood pressure may occur with use of estrogens in the menopause and blood pressure should be monitored with estrogen use. A worsening of glucose tolerance has been observed in patients on estrogen-containing oral contraceptives. For this reason, diabetic patients should be carefully observed. Estrogens may lead to severe hypercalcemia in patients with breast cancer and bone metastases.

PRECAUTIONS: Physical examination and a complete medical and family history should be taken prior to the initiation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic organs, and should include a Papanicolaou smear. As a general rule, estrogen should not be prescribed for longer than one year without another physical examination being performed. Conditions influenced by fluid retention such as asthma, epilepsy, migraine, and cardiac or renal dysfunction, require careful observation. Certain patients may develop manifestations of excessive estrogenic stimulation, such as abnormal or excessive uterine bleeding, mastodynia, etc. Prolonged administration of unopposed estrogen therapy has been reported to increase the risk of endometrial hyperplasia in some patients. Oral contraceptives appear to be associated with an increased incidence of mental depression. Patients with a history of depression should be carefully observed. Preexisting uterine leiomyomata may increase in size during estrogen use. The pathologist should be advised of estrogen therapy when relevant specimens are submitted. If jaundice develops in any patient receiving estrogen, the medication should be discontinued while the cause is investigated. Estrogens should be used with care in patients with impaired liver function, renal insufficiency, metabolic bone diseases associated with hypercalcemia, or in young patients in whom bone growth is not complete. If concomitant progestin therapy is used, potential risks may include adverse effects on carbohydrate and lipid metabolism.

The following changes may be expected with larger doses of estrogen:

a. Increased sulfobromophthalein retention.

b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability.

c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by PBI, T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered.

d. Impaired glucose tolerance.

e. Decreased pregnanediol excretion.

f. Reduced response to metyrapone test.

g. Reduced serum folate concentration.

h. Increased serum triglyceride and phospholipid concentration. As a general principle, the administration of any drug to nursing mothers should be done only when clearly necessary since many drugs are excreted in human milk.

ADVERSE REACTIONS: The following have been reported with estrogenic therapy, including oral contraceptives: breakthrough bleeding; spotting; change in menstrual flow; dysmenorrhea; premenstrual-like syndrome; amenorrhea during and after treatment; increase in size of uterine fibromyomata; vaginal candidiasis; change in cervical erosion and in degree of cervical secretion; cystitis-like syndrome; tenderness, enlargement, secretion (of breasts); nausea, vomiting; abdominal cramps, bloating; cholestatic jaundice; chloasma or melasma which may persist when drug is discontinued; erythema multiforme, erythema nodosum; hemorrhagic eruption; loss of scalp hair; hirsutism; steepening of corneal curvature; intolerance to contact lenses; headache, migraine, dizziness, mental depression, chorea; increase or decrease in weight; reduced carbohydrate tolerance; aggravation of porphyria; edema; changes in libido.

ACUTE OVERDOSAGE: May cause nausea, and withdrawal bleeding may occur in females.

DOSAGE AND ADMINISTRATION:

PREMARIN® Brand of conjugated estrogens tablets, USP

1. *Given cyclically for short-term use only.* For treatment of moderate to severe *vasomotor* symptoms, atrophic vaginitis, or kraurosis vulvae associated with the menopause (0.3 to 1.25 mg or more daily). The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible. Administration should be cyclic (eg, three weeks on and one week off). Attempts to discontinue or taper medication should be made at three- to six-month intervals.

2. *Given cyclically.* Female castration. Osteoporosis. Female castration—1.25 mg daily, cyclically. Adjust upward or downward according to response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Osteoporosis —0.625 mg daily. Administration should be cyclic (eg, three weeks on and one week off).

Patients with an intact uterus should be monitored for signs of endometrial cancer and appropriate measures taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

PREMARIN® Brand of conjugated estrogens Vaginal Cream

Given cyclically for short-term use only. For treatment of atrophic vaginitis or kraurosis vulvae.

The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible.

Administration should be cyclic (eg, three weeks on and one week off).

Attempts to discontinue or taper medication should be made at three-to-six month intervals.

Usual dosage range: 2 to 4 g daily, intravaginally, depending on the severity of the condition.

Treated patients with an intact uterus should be monitored closely for signs of endometrial cancer and appropriate diagnostic measures should be taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

References:

1. Whitehead MI, Townsend PT, Pryse-Davies J, et al: Effects of estrogens and progestins on the biochemistry and morphology of the postmenopausal endometrium. *N Engl J Med* 1981;305:1599-1605. **2.** Paterson MEL, Wade-Evans T, Sturdee DW, et al: Endometrial disease after treatment with oestrogens and progestogens in the climacteric. *Br Med J* 1980;280:822-824. **3.** Magos AL, Brincat M, Studd JWW, et al: Amenorrhea and endometrial atrophy with continuous oral estrogen and progestogen therapy in postmenopausal women. *Obstet Gynecol* 1985;67:496-499. **4.** Whitehead MI, Lane G, Siddle N, et al: Avoidance of endometrial hyperstimulation in estrogen-treated postmenopausal women. *Semin Reprod Endocrinol* 1983;1:1;41-52. **5.** Barnes RB, Roy S, Lobo RA: Comparison of lipid and androgen levels after conjugated estrogen or depo-medroxyprogesterone acetate treatment in postmenopausal women. *Obstet Gynecol* 1985;66:216-219.

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a calm philosophic look at yourself. Are you truly involved with your colleagues in medicine, or have you made a decision to "Let George do it?"

"I expect to pass through this world but once; Any good thing therefore that I can do or any kindness that I can show to any fellow creature, let me do it now. Let me not defer or neglect it, for I shall not pass this way again." — M.E.A.

QUESTIONS AND ANSWERS

(Continued from page 469)

who are elder caregivers is also a major issue.

The Department is striving for increased options in lifestyles and benefits for Iowa's elders. Most older people are quite self-reliant and may never need public services. Education and training of family caregivers is often the key to support for our aging population. This year the Department will initiate a major effort to support families of Alzheimer's victims. Older worker programs are providing employment opportunities to many elders and volunteerism is flourishing in our most experienced generation.

The Department's Elder Cottage Housing option program is gaining much attention. Together with the Department of Public Health, we are developing a program to promote health and wellness among elders. Finally, the Department is pursuing an affordable long term care insurance program to meet their needs.

What concerns does your Department have in the area of health care for Iowa's elderly?

The Iowa Department of Elder Affairs is concerned about accessible and affordable quality health care for elders. Issues in this area include adequate geriatric training for physicians and nurses, the willingness of physicians to accept Medicare assignment, maintenance of rural hospitals and the availability of long term care insurance.

What are the future goals of the Iowa Department of Elder Affairs?

Future goals include implementation of a comprehensive community based long term care program for elders, reduction of elder abuse, increased information and education to help elders be better consumers and promotion of elders as one of Iowa's most valuable resources.

DATE CHANGED FOR 1987 SCIENTIFIC SESSION/ ANNUAL MEETING

The dates of the Scientific Session/Annual Meeting have been changed to Friday, April 3; Saturday, April 4 and Sunday, April 5 at the Hotel Savery.

Apparently, when possible dates were discussed with the Hotel Savery staff, the wrong calendar was utilized and we were unaware the weekend chosen was Easter weekend. We regret any inconvenience the date change may cause to IMS members, especially officers, delegates and alternate delegates.

The Hotel Savery has advised that because of any inconvenience, it is reducing its regular room charge and rooms will be available at a flat rate of $50 per night (single or double).

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PEOPLES DRUG

LETTER TO THE EDITOR

Hospital Management

Dear Editor:

Recent proposed legislation including the Medicare Quality Protective Act of 1986, extends existing authority over qualitative aspects of medical practice in the hospital setting. Such legislation by the federal government implies lack of existing effective controls, specifically shortcomings in our current peer review activities.

As a practicing Internist, it is my continued belief that professionals are their own best critics. Policy imposed upon us from outside regulatory bodies frequently ends up cumbersome and ineffective. It is therefore proper and timely that hospitals themselves become better managed to assure predictable and safe outcomes for their client patients.

Heretofore hospitals have been supervised by "bricks and mortar" oriented professionals who in most instances have limited personal insight in the field of direct patient care. This nation now has plenty of hospital beds and adequate physical plants to care for the needs of its ill citizens. It is my contention that we now shift the function of hospital administration to the direction of excellence of patient care, assuring higher patient satisfaction and the minimalization of risk while in the hospital environment. Fortunately, the current abundance of physicians and experienced nurses can provide a large pool from which potential hospital managers could be sought. The professionals have invaluable experience and empathy in the first hand delivery of health care. Excellent training programs currently exist whereby physicians and nurses can obtain graduate degrees in hospital administration and finance.

Hospitals are primarily a service industry. Effective management rests on effective measurement of performance of personnel. Traditionally this has not been the main interest of hospital chief administrators, being relegated instead to "head nurses." Management skills, especially those that relate to effective performance review need to be taught on a more wide spread basis to hospital management. In comparison, probably no other service industry the size of health care parallels its lack of structural authority over the delivery of its own function. In a like context, physicians remain primarily independent agents with at best loose supervision and accountability as it relates to the quality of their practice.

Similar to variability in performance of individuals are the problems of high technology. Hospital based care is becoming progressively more dependent on equipment. Adverse outcomes however remain failures of individual performance. As our system becomes more complex, accountability becomes more essential. In large part, the modern hospital is similar to our space agency NASA. The recent space shuttle disaster can be traced to a complex bureaucracy whereby no one key individual had the responsibility for implementing an inherent weak design. In addition, decision making was in large part a committee rather than an individual function. The public was misled into believing that high technology alone can provide spectacular results. In reality, effective management and performance accountability remains just as important now as it always has been in any organization. Laboratory equipment, ventilators, computers, etc, remain only adjuncts to the personnel that operate them.

"Heretofore hospitals have been supervised by 'bricks and mortar' oriented professionals who in most instances have limited personal insight in the field of direct patient care."

In summary, this nation has an abundance of health care providers leaving only a small minority of the population unserved. The public now can rightfully expect a high certainty of excellence when it receives health care, especially in the hospital setting. The onus lies upon us as physicians and hospital managers to restructure our organizations to achieve this end. Lines of authority will by necessity be shifted, yet if done with forethought will preserve the satisfaction that we now enjoy practicing medicine. — James A. Conroy, M.D., *Board Certified, Internal Medicine, Council Bluffs, Iowa.*

DOCTOR, Do You Need A Life Insurance Check-up?

Take this quiz to see! Unless you answer true in each case, chances are you need to look at your insurance condition!

TRUE	FALSE	
_____	_____	**I can increase, decrease, or stop premium payments without affecting my coverage.**
_____	_____	**I can change my coverages without buying additional policies.**
_____	_____	**I can obtain 10% to 11% tax-deferred interest on my existing cash values.**
_____	_____	**I can withdraw my cash tax-free without charge.**
_____	_____	**I have maximum protection from my existing policies.**

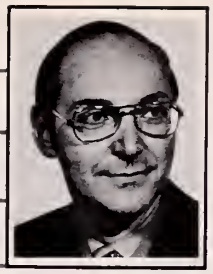
Important as it is, you may not be sure of your personal insurance situation. That's where we can help. As insurance administrator for the Iowa Medical Society, we are skilled in helping member physicians review their individual circumstances. We can offer you full analysis of your personal and business insurance status. It's part of our service!

We'll be happy to have you call to arrange a review of your insurance situation. Please ask for Mr. Bernie Lowe and Mr. John Bain. We're at The Prouty Company.

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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



THE PAIN AND JOY OF READING PROOF

TODAY I FINISHED READING the galley proofs of a book I brought into being. The work's title is *Exploring the Concept of Mind* and will have appeared by the time this is read, having been published by the University of Iowa Press. Proofreading is, for me, a painful effort. More than that, I hate it. And yet it must be done well, in fact very well, since words in their printed form are our major means of formal communication, and proofreading is the means of assuring that technical bloopers don't interfere with transmitting the message. What satisfaction I can find in it comes when I find errors and correct them.

This particular effort I carried to the oceanside. I'd hoped that sitting at a picnic table 20 yards from the surf's edge would add a bit of tranquility to soothe me, because in truth, although I value the accuracy that proofreading assures, I've never felt the joy was equal to the pain. I was right about the beneficial effect of the surf — it has many virtues.

Watching the shapes and colors of the forming waves and reading proof are both somewhat like the practice of medicine — there's an enormous amount of repetition. Performing a physical exam under routine circumstances seems so like doing all the others. Yet the prospect always lurks that something may prove a little different, that a surprising physical finding may impart some special significance, just as proofreading may disclose an error, or the surf-watching seeks to predict which wave may be the one that will crest taller and leave its mark higher on the beach than any of its recent companions. That's part of what keeps medicine so perennially fascinating.

In a recent lecture to sophomore medical students about how to examine the skin, I tried to stress the importance of a close look that notices fine details and forces eye and brain to work together to integrate meaning from what they find, and to decide if what they see is OK or not. I guess that's the same sort of intellectual phenomenon that occurs during proofreading.

I'd never before had responsibility for such a lengthy proofreading because I'd always kept my vow, after carrying to publication my first scientific paper, that since an article involved so much work, I certainly wasn't ever going to write a book. It took 30 years before I broke — in part — that vow. (I say in part because most chapters of the book were written by others.) Maybe that length of time will offer me partial protection from the punishment that befalls a breaker of vows.

Just when the weight of this book was full upon me, I found Mark Twain speaking through the mouth of his young hero in the final paragraph of that great novel, The Adventures of Huckleberry Finn: " . . . if I'd a knowed what a trouble it was to make a book I wouldn't a tackled it and ain't agoing to no more." I agree, I agree. And Huckleberry Finn remained silent evermore. But Twain didn't stop writing at that point, which seems a wonderful thing. On this day, at least, I hope to have the good sense to follow Huck's words rather than Twain's example. But I'm cheerfully willing to examine more patients and watch more surf.

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

ENALAPRIL: A NEW ANGIOTENSIN-CONVERTING ENZYME INHIBITOR

ENALAPRIL IS A NEWLY RELEASED angiotensin-converting enzyme (ACE) inhibitor currently FDA approved for the treatment of hypertension and awaiting approval for use in congestive heart failure. Until now, captopril has been the only commercially available ACE inhibitor. Because of its side effects and fear of impairing renal function, captopril has been reserved for more resistant hypertension and congestive heart failure (CHF). Enalapril provides an option to captopril with fewer side effects and simpler dosing, yet with the same therapeutic effectiveness of an ACE inhibitor.

History

The development of ACE inhibitors dates back to the early 1960s. Ferriera and colleagues, interested in bradykinin research, discovered that venom of a South American pit viper contained substances which increased bradykinin activity.[1] These "bradykinin potentiating factors," as they were referred to, acted by inhibiting the pulmonary enzyme that normally degrades bradykinin. In 1967, Ng and Vane showed that inhibition of this same enzyme would also block conversion of Angiotensin I to the active pressor hormone Angiotensin II.[2] Green, Stewart and Ferriera isolated and characterized several low-molecular-weight venom peptides that were only incidentally noticed to also lower blood pressure.[3] Based on this information and the work of Cushman *et al*, Squibb produced a synthetic nonapeptide, teprotide, the first ACE inhibitor demonstrated to be effective in lowering blood pressure, especially in high renin systems.[1, 4] Further structural analysis of the angiotensin-converting enzyme by Cushman and Ondetti revealed a 3 amino acid sequence which they felt was crucial for inhibition and from which they successfully developed an orally active analog known as captopril.[5]

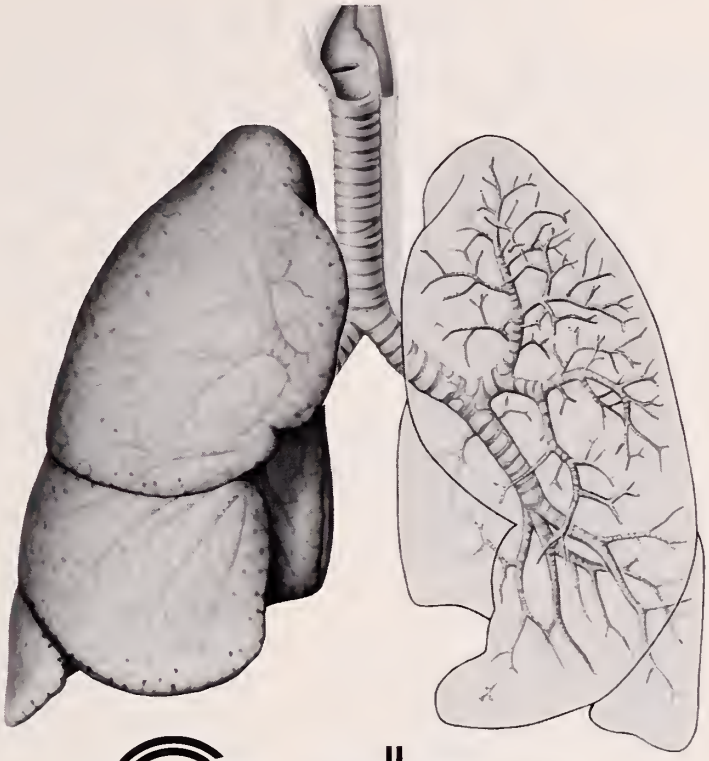
Early clinical reports with captopril indicated rash and loss of taste as common adverse reactions. Because similar side effects were seen with penicillamine, another sulfur-containing compound, Patchett *et al* at Merck, Sharp, and Dohme began working on an inhibitor lacking the mercapto group. The end result was an entire group of sulfhydryl-free compounds, of which enalapril was chosen for clinical trials because of high potency and beneficial pharmacokinetics.[6]

Pharmacokinetics

The absorption of enalapril in the GI tract is not influenced by the presence of food. It is 60% or less protein bound and does not cross the blood-brain barrier. Enalapril does not cross the placenta in hamster studies, but does enter breast milk in rats. Interestingly, enalapril is a prodrug with little ACE inhibition activity of its own. It must be deesterified by esterases located predominantly in the liver to the active metabolite enalaprilat. Peak blood level for en-

(Please turn to page 484)

Consider the causative organisms...



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Haemophilus influenzae, H influenzae, Streptococcus pneumoniae, Streptococcus pyogenes
(ampicillin-susceptible) (ampicillin-resistant)

Note: Ceclor® is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

Ceclor® (cefaclor)

Summary. Consult the package literature for prescribing information.

Indications: Lower respiratory infections, including pneumonia, caused by susceptible strains of *Streptococcus pneumoniae, Haemophilus influenzae,* and *S. pyogenes* (group A beta-hemolytic streptococci).

Contraindications: Known allergy to cephalosporins.

Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- In renal impairment, safe dosage of Ceclor may be lower than that usually recommended. Ceclor should be administered with caution in such patients.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, erythema multiforme, serum-sickness-like reactions): 1.5%; usually subside within a few days after cessation of therapy. These reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%.

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children)
- Abnormal urinalysis; elevations in BUN or serum creatinine
- Positive direct Coombs' test
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly)

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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alapril occurs 1 hour post-ingestion; enalaprilat level peaks at 4 hours. Elimination is primarily renal. The functional half-life is 11 hours and once-a-day dosing is efficacious. The initial recommended dose is 5 mg. When beginning therapy, diuretics should be stopped 2 to 3 days before starting enalapril to minimize the initial hypotension. The usual maintenance dose is 10 to 20 mg per day with a maximum of 40 mg per day. The LD_{50} in mice and rats is 2000 mg/kg.

Enalapril has several advantages when compared to captopril, the only other available oral ACE inhibitor. Absorption of captopril is impaired by food and it is recommended to be taken 1 hour before meals. Captopril is directly active, resulting in a slightly higher incidence of sudden hypotension. Also, captopril is less potent with a shorter functional half-life of 3 hours requiring 25 to 50 mg on a tid dosing schedule.

The pharmacokinetics of enalapril are altered with certain disease states. Enalapril and its active metabolite are primarily excreted by the kidney with an average drug clearance of 157 ml/min in healthy individuals, suggesting that both secretion and filtration processes take place. With a dosage of 5 mg per day, drug accumulation was noted in those individuals with a creatinine clearance of less than 40 ml/min.[7] The manufacturers recommend an initial dose of 2.5 mg if creatinine clearance is less than 30 ml/min.

Individuals with significant liver disease may also need dosage adjustments. One study compared the esterase activity of healthy cadaveric livers to diseased livers (defined by increased liver function tests and evidence of cirrhosis or hepatitis at autopsy). The rate of production of enalaprilat from enalapril in an in vitro setting was significantly decreased with the diseased as compared with healthy liver tissue.[8] In healthy individuals, enalapril is 60% absorbed with one-third renally excreted before hepatic conversion providing an overall 40% bioavailability. Patients with liver disease may have decreased bioavailability of active drug secondary to increased renal clearance of enalapril prior to conversion along with slower onset of the initial hypotensive effect. The end result is that larger doses may be required, but in vivo studies are needed to confirm this.

Pharmacodynamics

ACE inhibitors exert their hypotensive effect through inhibition of the renin-angiotensin-aldosterone system, but other mechanisms may also be involved. Angiotensinogen, produced by the liver, is catalyzed by renin, produced in the juxtaglomerular apparatus of the kidney, to Angiotensin I (AI). ACE then cleaves a dipeptide from AI to form Angiotensin II (AII), the most potent endogenous vasoconstrictor. AII also stimulates aldosterone synthesis in the adrenal cortex with its ultimate antinatriuretic effect on the kidney. Hormone changes measurable after ACE inhibition demonstrate a rapid fall in AII, mild decrease in aldosterone, and a gradual increase in plasma renin activity which reflects a blocked negative feedback inhibition.

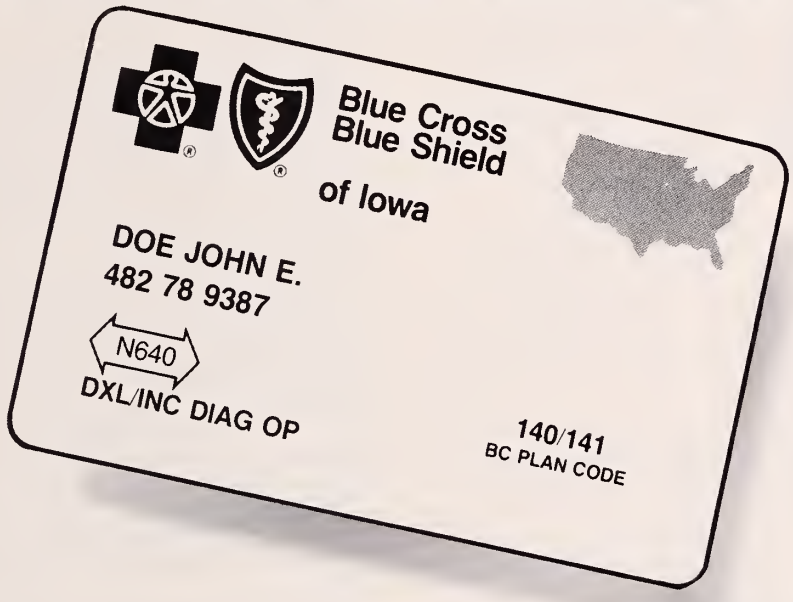
The hemodynamic effects were measured in a noninvasive study of patients with mild to moderate hypertension treated for 1 week with placebo and then 4 weeks with enalapril 20 mg per day. Results showed a decrease in mean arterial blood pressure of 21%, limb vascular resistance down 24%, limb blood flow increased 11%, and cardiac output (measured by impedance cardiography) up 8%. There was no significant change in heart rate.[9]

ACE has the dual role of catalyzing the transformation of bradykinin, the most potent endogenous vasodilator, into inactive fragments, and this may in some circumstances contribute to enalapril's hypotensive effect. Inhibition of AII formation, though, appears to be the major antihypertensive mechanism. In a dog study involving acute heart failure where 1 group was treated with a new renin inhibitor and the other with enalapril, similar success was demonstrated in decreasing systemic vascular resistance, implying a common mechanism.[10]

AII and bradykinin both influence prostalandin synthesis; whether this effect contributes to the antihypertensive effect of enalapril is yet unknown. Also, the fact that decreased blood pressure from ACE inhibition is not associated with reflux tachycardia suggests a connection with the autonomic nervous system yet to be defined.

(Please turn to page 486)

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Efficacy

Since first used in human subjects in 1980, enalapril has demonstrated its efficacy in multiple trials involving over 3,500 individuals. In patients with mild hypertension (diastolic 90 to 104 mmHg), enalapril given initially at 10 mg per day (and gradually increased to 40 mg if no response) demonstrated a 54% response with q day and 61% with bid dosing, both significantly better than the 13% placebo response.[11] (Response defined as a diastolic pressure decrease of 10 mmHg or maintained at 85 mmHg or less.)

Comparison of enalapril versus hydrochlorothiazide (50 to 100 mg/day) showed similar efficacy and a complementary effect when administered together.[12] In the subgroup of Black patients however, hydrochlorothiazide was superior with 72% response as compared to 35% with enalapril.[11]

Enalapril was compared to beta-blockers in 3 multiclinic trials using propranolol, atenolol, and metoprolol. The results showed a similar degree of efficacy in terms of diastolic pressure; however, enalapril had a consistently greater decrease in systolic pressure.[12] Data from Doppler studies of the brachial artery demonstrated increased diameter and blood flow with enalapril versus propranolol.[13] It appears ACE inhibitors improve arterial compliance by dilating both large arteries and small arterioles.

In moderate to severe hypertension (diastolic 110 to 130 mmHg), enalapril administered with hydrochlorothiazide and methyldopa was found to have similar efficacy as the standard triple therapy of propranolol, hydrochlorothiazide, and hydralazine.[11] In the separate category of renovascular hypertension, a substantial portion has only responded to medical therapy which has included an ACE inhibitor (captopril or enalapril).[14] This subgroup, however, is also at risk for developing renal failure, and kidney function should be monitored shortly after initiating therapy.

Another area where enalapril may be employed is in the treatment of congestive heart failure. Prazosin and hydralazine both have demonstrated improvement in exercise tolerance, but neither have shown a benefit beyond 1 year. Only captopril has demonstrated a persistent beneficial response, both clinically and

hemodynamically.[15] Studies with enalapril have also shown significant improvement in exercise tolerance as compared with placebo.[12] Invasive studies indicate that enalapril acts to decrease both preload and afterload.[16] FDA approval of enalapril for treatment of CHF is pending.

Adverse Effects

A major reason ACE inhibitors have been reserved for resistant hypertension is due to the concern over side effects. When captopril was first introduced it was administered in dosages of up to 150 mg tid — 3 times that presently recommended. It was also frequently employed in a population who are now known to be at high risk for adverse effects. In patients with preexisting renal impairment and connective tissue disease who were given captopril, 7% developed neutropenia. In hypertensive but otherwise healthy individuals, the incidence of neutropenia with captopril is only .02% to .04%.[11] Captopril, though, has been associated with increased incidence of rash (2-10%) and dysgeusia (1-7%); the reported incidence with enalapril is 1.2% and .5%, respectively. Of 34 compassionate-use reports of rash development with captopril, only 3 recurred with enalapril.[11] Patchett *et al* feel the sulfhydryl group of captopril is responsible for the difference.[6]

One major side effect of ACE inhibitors is impaired renal function. In healthy individuals, enalapril decreases urine osmolarity and increases H_2O clearance, thus increasing the urinary diluting ability. Serum potassium, on the average, increases 0.2 mEq/l. A potassium greater than 5.7 mEq/l occurred in 1% of patients, and 0.28% discontinued enalapril because of persistent hyperkalemia. In the setting of bilateral renal artery stenosis (RAS) or solitary kidney with stenosis, treatment with an ACE inhibitor can rapidly progress to renal failure. The mechanism is felt to be explained by the preferential constriction of the efferent arteriole caused by AII which acts to maintain a glomerular filtering pressure in a poststenotic setting. If AII production is blocked in the presence of reduced perfusion pressure, glomerular filtration would decline with ensuing renal failure.[17] There are many reports of pa-

(Please turn to page 488)

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tients with bilateral RAS treated with ACE inhibitors without decline in renal function; it may be that these individuals have stenosis which is not yet critical.

In 1985 Sesoko and Kaneko described a patient developing a nonproductive cough associated with captopril therapy.[18] Since then, several patients receiving enalapril have been reported with a similar drug-related cough.[19] Inhaled kinins provoke bronchoconstriction in asthmatics.[20] Kinin potentiation by ACE inhibitors may be responsible for cough development.

Indications

ACE inhibitors should be utilized in disease states exacerbated by a normal to increased renin level, such as hypertension and congestive heart failure, which are not properly controlled by cheaper and more reliable medications. Diuretics are effective for many individuals, but with certain metabolic states alternative therapy is indicated. For example, hydrochlorothiazide may worsen hyperglycemia in a Type II diabetic or precipitate an attack of gout in a predisposed individual. Also, diuretic-induced hypokalemia can be mildly counteracted with additional antihypertensive effect by adding an ACE inhibitor.

Beta-blockers, the other class of first-line antihypertensives, are contraindicated in asthma, heart failure, diabetes, and peripheral vascular disease. Beta-1 selective agents in low doses lessen the negative effects of beta-2 blockade, but do not eliminate them. Adverse central nervous system effects of fatigue, depression, insomnia, or nightmares make beta-blockers intolerable for some, even with the lipid-insoluble forms. Finally, recent evidence suggesting increased atherogenic lipids associated with beta-blocker use may be another indication for alternative drug therapy in patients felt to be in a high-risk group for developing atherosclerotic complications.[21]

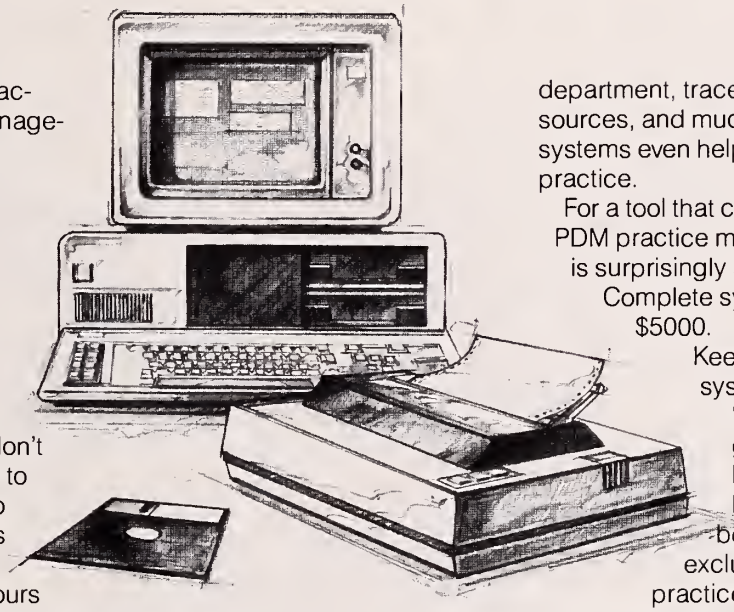
Summary

Enalapril is a newly released ACE inhibitor with several advantages over the other drug in its class. It has a more convenient dosing schedule and less incidence of taste disturbance or rash as compared to captopril. Multiple studies have demonstrated its efficacy and safety, but as with all ACE inhibitors, bilateral renal artery stenosis or renal artery stenosis with a single kidney is a contraindication. Enalapril is competitively priced. Enalapril's overall advantages make it a good alternative to present first-line antihypertensive agents and a potential agent for congestive heart failure pending FDA approval. In general, enalapril may enhance ACE inhibitor utilization and along with it bring a greater understanding to this unique class of drugs. — JOSEPH MCRAITH, M.D., *Resident in Internal Medicine* and ANNETTE FITZ, M.D., *Professor, Department of Internal Medicine.*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

CONTINUED SUCCESS OF IMMUNIZATION LAW

ENACTED IN 1978 in the aftermath of a measles epidemic in which 4,333 cases were reported, the immunization law is now 8 years old. Its continued success is documented in both audit statistics and disease incidence. Over 99% of the school age population is in compliance with the law, 98.8% immunized and .4% exempted. Of the entering kindergarten class over 98% were in compliance, 97.7% immunized and .5% exempted.

Its continued success is due to the continued dedication of the physician, school officials and school nurses, students and their parents toward making the law work.

In the years since enactment, vaccine preventable disease incidence has decreased considerably with 4 cases of poliomyelitis, 110 cases of measles, 146 cases of rubella, 755 cases of mumps, and 85 cases of pertussis reported over the past 8 years.

Whooping cough cases have been sporadic and confined to the under 24-month age group until the recent increase in inappropriate fear and anxiety concerning side effects of the vaccine. The result of this publicity has been a 150% increase in cases in 1984 and a 466% increase in 1985 over the average of the previous 6 years. As of this date the state has received reports of 11 cases.

Poliomyelitis due to the wild virus virtually has disappeared in the United States. Approximately 10 cases due to vaccine strains are being reported annually. The last cases of wild virus in Iowa occurred in 1979. One case of polio vaccine strain was reported in 1982.

Rubella, with the exception of 3 imported cases (one each from England, South Korea, and Oklahoma) has not existed in Iowa as an indigenous disease since 1981.

Mumps vaccine is not included in the law but has been routinely administered with measles and rubella vaccines. Cases have declined steadily since 1979 to a low of 19 cases reported in 1985.

Measles incidence was steadily declining nationwide until this year with outbreaks confined primarily to high school and college age youths. This year the nation experienced widespread outbreaks, some of major significance. To date 36 states including Iowa have reported measles cases confirmed by laboratory tests. In Iowa, 7 counties (Monona, Pottawattamie, Cedar, Des Moines, Polk, Scott, and Johnson) have reported a total of 137 cases. Fifty-two were confirmed by the State Hygienic Laboratory. Major outbreaks occurred in Monona, Scott, and Johnson counties. Out of state importations were confirmed in 2 county outbreaks and suspected in 1 other. Johnson County's first case occurred in a University of Iowa student who contracted measles in New Jersey. The Polk County outbreak was traced to a visitor from the state of Nevada. The index case of the Monona County outbreak was a wrestling student who attended a post season tournament in Omaha.

The origin of the Scott County outbreak is unresolved. Cedar County and Des Moines County cases were traced directly to Scott County's outbreak. The Pottawattamie County case could not be traced to a source but the only travel was to Omaha and to the special

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Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of triamterene and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Angiotensin-converting enzyme (ACE) inhibitors can elevate serum potassium; use with caution with 'Dyazide'. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function. Thiazides may add to or potentiate the action of other antihypertensive drugs. Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

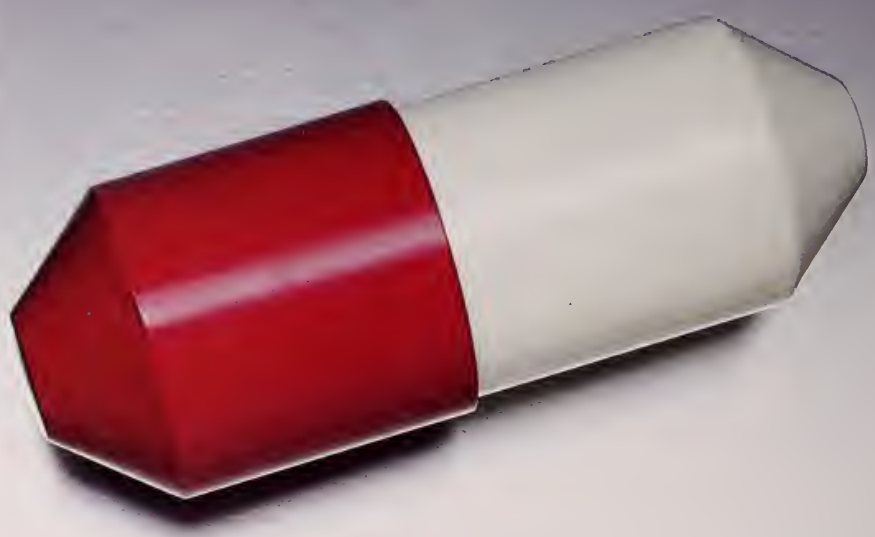
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olympics in Ames, Iowa, where other measles cases occurred. However, contact at this event was well beyond the incubation period. The outbreaks in each instance were transmitted within closed environments (schools, households, one day care center, and one hospital). Twelve or 8.7% of the cases were hospitalized. Only 28 or 20.4% were unimmunized. The remaining cases either had received an immunization after 12-months of age or were too young to be immunized.

The failure of the disease to spread between high schools, despite ample opportunity, or to spread further in the community is a tribute to the success of the immunization law. However, with 20.4% of the cases potentially preventable it is obvious more work needs to be done to properly immunize high school students and preschool children. Seven percent of the cases occurred in unimmunized preschool children. Over 5,000 doses of measles-rubella vaccine were distributed and used to halt the outbreaks. This represents vast savings compared to past epidemics and was due to the complete records maintained at the affected schools, enabling staff to identify students at risk rather than "shot gunning" as in the past.

While there have not been any new reports of measles in the past 6 weeks, it is important to be aware of the potential for an outbreak as the school year commences. Please utilize the toll free number (1-800-362-2736) for reporting rash illnesses and other communicable diseases and obtain acute bloods on every suspect case of measles or rubella for shipment to the State Hygienic Laboratory.

August 1986 Morbidity Report

Diseose	Aug 1986 Totol	1986 to Dote	1985 to Dote	Most August Coses Reported From These Counties
Aids	2	12	9	NA
Amebiosis	10	34	42	Scottered
Brucellosis	0	1	4	
Chickenpox	5	6634	5348	Dubuque, Johnson, Webster
Compylobocter	36	246	218	Scottered
Cytomegolovirus	3	15	7	Clinton, Johnson, Polk
Eotons Agent Infection	4	10	6	Block Howk, Linn, Scott
Encepholitis, virol	3	9	13	Clinton, Scott, Webster
Erythemo Infectiosum	0	262	0	
Gostroenteritis (GIV)	13	11699	10123	Block Hawk, Johnson
Giordiosis	53	224	307	Scottered
Hepotitis, A	5	32	33	Scottered
Hepotitis, B	12	65	64	Scottered
Hepotitis, Non A-B	4	20	12	Johnson, Polk, Pottowottomie, Wopello
Hepatitis type unspecified	1	1	6	Dubuque
Herpes Simplex	127	852	735	Scottered
Herpes Zoster	0	0	0	
Histoplosmosis	1	18	15	Morion
Infectious mononucleosis	2	155	105	Polk
Influenzo, lob confirmed	0	247	169	
Influenza-like illness (URI)	26	71742	25092	Block Hawk, Johnson
Legionellosis	1	7	5	Boone
Molorio	0	1	1	

Diseose	Aug 1986 Totol	1986 to Dote	1985 to Dote	Most August Coses Reported From These Counties
Meningitis				
oseptic	8	29	29	Scottered
bocteriol	4	61	93	Johnson, Keokuk, Polk, Scott
meningococcol	0	11	7	
Mumps	4	24	10	Boone, Dollos, lowo, Johnson
Pertussis	2	13	5	Cerro Gordo, Webster
Robies in onimols	17	132	116	Scottered
Reye Syndrome	0	0	4	
Rheumotic Fever	0	6	2	
Rubello (Germon meosles)	0	1	1	
Meosles	55	134	0	Johnson, Monono, Scott
Solmonellosis	36	168	209	Scottered
Shigellosis	4	16	14	Johnson, Linn, Scott, Winneshiek
Toxic Shock Syndrome	2	8	5	Polk, Woodbury
Tuberculosis				
totol ill	6	35	43	Henry, Johnson, Scott, Toylor
boct. pos.	6	32	40	Henry, Johnson, Scott, Toylor
Typhoid Fever	0	1	0	
Venereol diseoses:				
Gonorrheo	476	2576	2902	Scottered
Chlomydio	269	1661	26	Scottered
Syphilis	0	6	17	

Other Non-Reportable Diseoses: Ureoplosmo Ureolyticum — 2, Johnson; 1, Woshington.

News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Kenneth M. Andersen has joined **Drs. Don C. Green, Harold E. Eklund** and **John C. Tapp** in family practice at the Mercy-Urbandale Clinic in the Merle Hay Mall in Des Moines. . . . **Dr. William N. Newland,** Des Moines, is the first board member, in the 18-year history of the Boys and Girls Club of Des Moines, to receive the Boys Club Medallion Award. The national honor was presented to Dr. Newland in recognition of his service to the organization at its annual meeting. . . . **Dr. William W. Quick,** West Des Moines, was elected president of the American Association of Diabetes Educators (AADE). Dr. Quick has served on the AADE's board of directors since 1972. . . . **Dr. Margaret A. Kopchick** has joined **Dr. Winston B. Ditto** in the practice of dermatology in Burlington. Dr. Kopchick received the M.D. degree at the University of Michigan Medical School; completed her internship at William Beaumont Hospital in Royal Oak, Michigan, and her dermatology residency at the University of Iowa Hospitals and Clinics in Iowa City.

Dr. Michael J. Vruno, Fulton, Illinois, retired in July. Dr. Vruno received the M.D. degree at Loyola University Medical School in Chi-

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cago and interned at Chicago's Cook County Hospital. He began medical practice in Fulton in 1950. . . . **Dr. John Howell** and **Dr. Charles Rodgers** have joined the Emergency Services Department at Ottumwa Regional Health Center. Dr. Howell received the M.D. degree at the University of Arkansas Medical School and interned at Tripler Army Medical Center. Dr. Rodgers received the M.D. degree at the U. of I. College of Medicine and completed an internal medicine residency at Iowa Methodist Medical Center in Des Moines. . . . **Dr. Ronda Dennis-Smithart** has joined Ottumwa Pediatrics. Dr. Dennis-Smithart received the M.D. degree and served her pediatric residency at the U. of I. College of Medicine. . . . **Dr. Kenneth J. Gee,** Shenandoah physician for almost 40 years, retired in May. Dr. Gee received the M.D. degree at the U. of I. College of Medicine. Following military service during World War II, Dr. Gee began medical practice in Shenandoah. As a tribute of his longtime service to the civic and medical community in Shenandoah, Little McComb Park has been renamed Gee Park in his honor. . . . **Dr. Brent Brunsting** has joined **Dr. Donald Trefz** in family practice in Charles City. Dr. Brunsting received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency in Mason City. . . . . **Dr. F. G. Dannenbring,** Fort Dodge, was a recipient of the Raymond Blank Memorial Hospital for Children Recognition Award presented at the Pediatric Spring Conference. The annual award is presented to physicians directly involved in pediatric care and related advanced educational programs. . . . . **Dr. Paul J. Crowley** has joined Bluffs Urological Associates. Dr. Crowley received the M.D. degree at the U. of I. College of Medicine; interned and completed his urology residency at University of Kansas Medical Center. **Dr. Michael A. Romano** has joined Cogley Medical Associates. He received the M.D. degree at Creighton University School of Medicine in Omaha; interned and completed his family practice residency at Creighton University Affiliates. **Dr. Craig N. Seamands** has joined **Dr. Ronald L. Bendorf.** He received the M.D. degree at the University of Nebraska School of Medicine; interned and served his psychiatry residency at the Medical College of Virginia Hospital in Richmond, Virginia.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Serving Iowa's Elderly

Mary L. Ellis, Commissioner, Iowa Department of Public Health, is the guest columnist for this month's **In The Public Interest.** *Ms. Ellis discusses state services available to Iowa's elderly.*

MOST OF US ARE AWARE of the "graying" of America. In Iowa, people over age 65 constitute 14.4% of the population; 6.6% of Iowans are over 75.

Though programs of the Iowa Department of Public Health are geared to the general population, many serve a high percentage of elderly. The Department of Public Health (DPH) is not a direct provider of services but acts as a conduit for state and federal funding to local service agencies. The DPH also plays a significant role in establishing standards for services and setting parameters for which services will be funded.

Two key examples of DPH programs targeted for the elderly are public health nursing and homemaker-home health aides.

State public health nursing grants are made to counties, which may sub-contract with another agency to provide services. State grant funds constitute about 13% of county public health nursing services budgets. Medicare, Medicaid, health insurance and private fee payments on a sliding scale also fund a part of the budget. Public health nursing services range from preventive and education activities to skilled nursing care.

Studies conducted by the DPH in 1984 show public health nurses are caring for more and more seriously ill or incapacitated Iowans. The survey showed 33.5% of patients seen would likely have required permanent placement in a health care facility if home services had not been available. The corresponding figure in 1978 was 28%. The increase may appear relatively small, but it actually represents a 20% jump in the number of patients who might otherwise be placed in a facility.

Homemaker-home health aide/chore services is another program used primarily by the elderly. The program's objective is to assist clients in their homes and prevent or reduce institutionalization. State funds for this program are allocated to county boards of supervisors according to a legislated formula.

The DPH has undertaken other initiatives for the elderly. State funding is being provided to projects for well elderly clinics in 24 counties. The DPH Health Promotion section is working with the Department of Elder Affairs on health promotion. With the Healthy Older Iowans Council, we distribute information on exercise, nutrition, use of medication, safety and smoking.

Substance abuse among the elderly is also a concern. Under government reorganization, the DPH now includes the Division of Substance Abuse. This problem is receiving special attention through an innovative program at the Regional Substance Abuse Center in Ames. This project focuses on education, providing drug and alcohol information specific to the elderly.

The DPH also has a role in setting standards for long term care facilities. Though no longer involved in licensing, certification and complaint investigation, the State Board of Health continues to promulgate standards used in surveys of licensed facilities.

October 1986

Iowa Medicine

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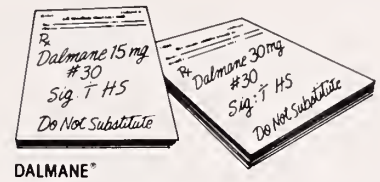
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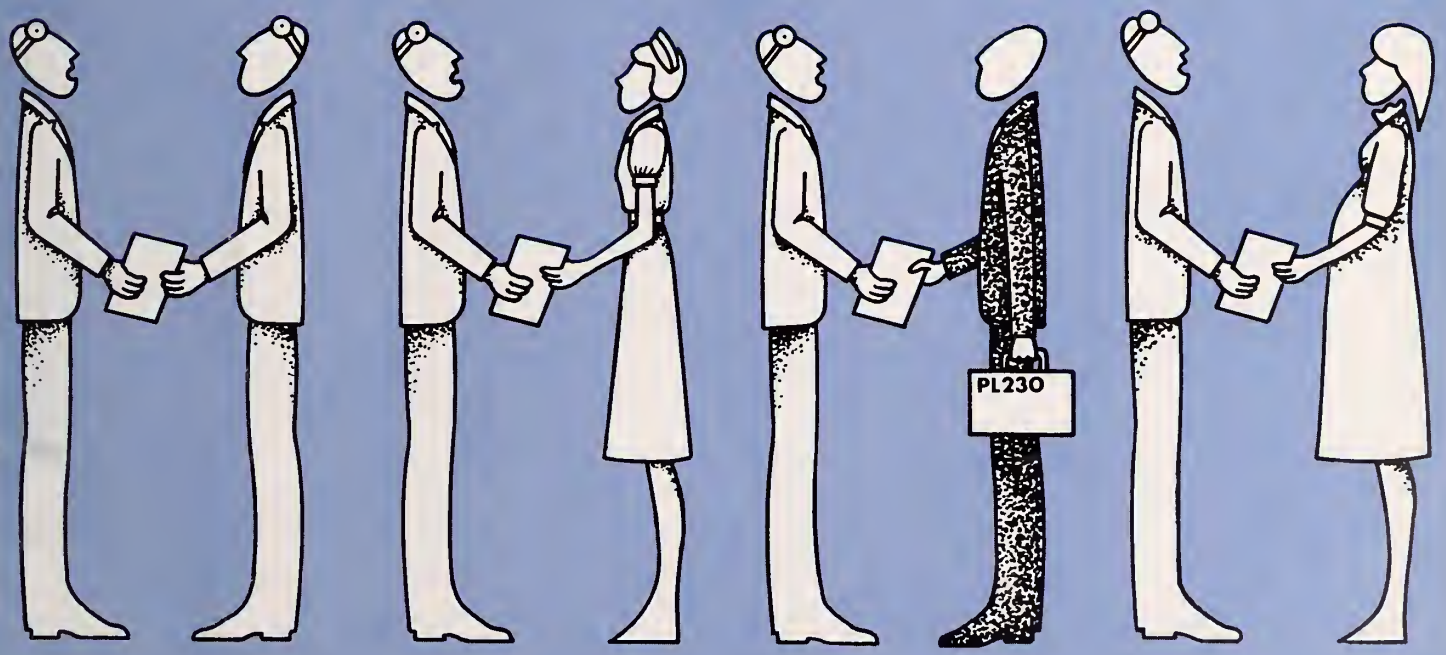
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IowaMedicine

November 1986 Journal of the Iowa Medical Society

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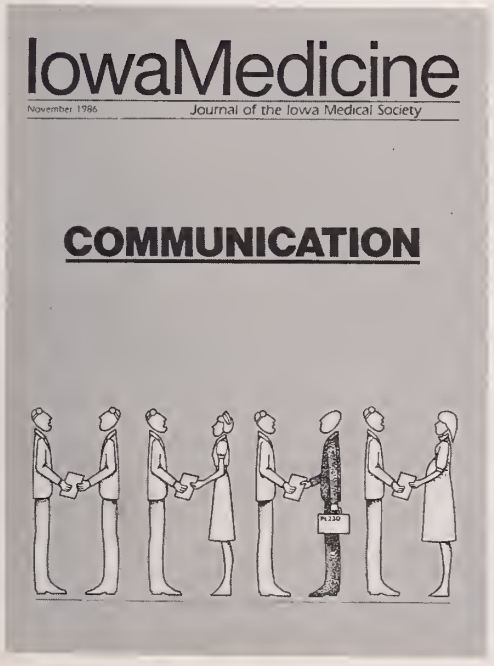
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ABOUT THE COVER



ABOUT THE COVER — The ability to communicate effectively is becoming increasingly important to Iowa physicians. This issue of IOWA MEDICINE explores how physicians can improve communication with patients, colleagues, legislators and other health care professionals.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and sociaecanamic interest mainly ta Iawa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 5026S.

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IOWA MEDICINE, Jaurnal af the Iawa Medical Saciety (ISSN 0746-8709) is published manthly by the Iawa Medical Society, 1001 Grand Avenue, West Des Maines, Iowa 50265. Subscriptian Price: $1S per year. Printed by The Ovid Bell Press, Inc., Fulton, Missauri 6S2S1. Second-class postage paid at Des Maines, Iawa, and at additianal mailing offices. POSTMASTER: Send address changes ta IOWA MEDICINE, Journal af the Iawa Medical Saciety, 1001 Grand Avenue, West Des Moines, Iowa S026S.

NATIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 Sauth 8lvd., Oak Park, Ill. 60302. Phane 312/383-8800

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WITH PHASE TWO of the IMS tort reform campaign about to begin, communicating with our lawmakers has never been more crucial.

Our 1986 efforts yielded liability reforms which are a solid foundation on which to build. Physicians and other professionals supporting much-needed change in the liability system will aim at even higher goals in 1987. However, these goals will not be achieved without the individual effort of everyone affected by Iowa's liability crisis.

This month's IOWA MEDICINE is devoted to communication. Among several excellent articles exploring different types of physician communication is one authored by state Representative Arthur Ollie of Clinton. His timely subject is physician-legislator communication. With the legislature set to convene January 12, I know you will pay close attention to Rep. Ollie's valuable advice on how to be heard by Iowa's lawmakers.

Legislators need to hear the opinions of their constituents. It is the responsibility of every physician to open lines of communication with local lawmakers and keep them open all year long — not just when the legislature is in session. As Rep. Ollie's article points out, legislators are anxious to discuss issues with voters and will make time to participate in productive forums.

Have you contacted your legislators about the liability crisis and its effect on your patients? Have you expressed your views to the legislative members of the Liability and Liability Insurance Commission? There's still time to do so. There's no doubt these lawmakers are hearing from those opposed to liability reform. Neither we nor our patients can afford the luxury of political apathy.

L. D. Caraway, M.D.

L. Dean Caraway, M.D.
President

Doctor-to-Doctor

Talk to One Another

DANIEL F. CROWLEY, M.D.
Des Moines, Iowa

Medicine has changed. According to this author, the days when physicians practiced independent of outside forces are gone forever. This article discusses how and why today's doctors must communicate effectively with one another.

THE MEDICAL PROFESSION TODAY — that's you and me — has a myriad of problems. There are political problems, economic problems, legal problems, medical problems, awesome ethical problems now coming to the fore, and communication problems such as those addressed in this issue of IOWA MEDICINE.

Like General Custer's famous last known words (somewhat edited), "Where did all the Indians come from?" — we might very well ask, "Where did all our problems come from?" Well, that's easy. Every generation, everywhere, has always had problems, but our problems come from the nature of contemporary society with its population explosion, the increasing longevity of people, heightened expectations, an accelerated proliferation of technology, knowledge and ideas, and from our struggle to adapt. What's the answer?

Painful as it might be on occasion, we, as doctors, have no recourse but to talk to one another. Unfortunately, that is not the entire answer. We must also, at times, reach a consensus.

For better or worse, there is something about our profession that generates individual independence. It has always been so. Whether this streak of individual independence exists because persons of that type gravitate to medicine, or because the nature of the work itself generates such independence, is uncertain. But the fact remains that doctors have always valued their independence even to the extent that they have been willing, in the past, to assume with confidence responsibility for making life and death decisions. Making such decisions has, heretofore, been no task for a committee.

But those days — those good old days of independence — are gone. Our problems are now too complex to be handled by each individual practitioner alone. The field of medicine is now so vast that specialties and subspecialties have evolved and consultation between doctors is frequently imperative. And, of course, it is equally imperative to respond in kind to our other problems, whether political, economic, legal, ethical, or whatever. We just have to talk things over!

There are several routes by which this communication can take place, and — this is nothing new — they are the traditional routes. You are familiar with them: conversations in hospital staff rooms and surgical dressing rooms, one-on-one conversation, medical society meetings (county, state, AMA, specialty meetings), and medical journals. A few words about each.

In this day and age, and in many communities, hospital staff rooms and surgical dressing rooms are common meeting places since a significant part of our practice revolves around hospital rounds. It is true that often one may hear, in these hallowed rooms, little about medicine but much about current football teams and games, particularly from "au-

Dr. Crowley is a retired general and thoracic surgeon in Des Moines.

thorities'' who probably don't really know the difference between a wingback and a tailback (what is the difference, anyway?), yet who nevertheless have a talent for Monday morning analysis. Be that as it may, serious words and thoughtful viewpoints can sometimes be heard relative to our many problems. At the very least, these two meeting rooms represent a convenient place to talk things over.

One-on-one consultation between doctors, particularly over case problems, represents the very best of modern day medical practice, and speaks for itself.

Medical society meetings can be both formal and informal forums for discussions, but, because of the complexity of medical information per se, county, state, and AMA meetings seem to lean more and more toward programs relating to our professional non-medical problems, while the specialty meetings more effectively handle the truly medical subjects.

Last but not least in our roster of communication routes are the medical journals. These are the true repositories of our communications, for, unlike the spoken word that is easily forgotten, the written word endures and remains available for recall and study. Also, the thoughtful process required to commit something to writing tends to soften harsh attitudes and moderate extreme positions, and that's all to the good.

I would be remiss if I did not include a few words about the *wrong* way to communicate with one's peers. It is a method used by important doctors. It goes something like this: a doctor directs his secretary to get you on the phone, which she does. Here's the hooker. If he, rather than his secretary, were to put in the call, he would have to wait while you were called to the phone. This way, you are the one who must wait. You see, his time is valuable.

If these words describing the wrong way to communicate with another doctor were not being committed to writing, I might be inclined to impute exaggerated self-importance to the offending doctor, but such words would hardly look well as they endured in archives somewhere. So let's just say, in all charity as the Christmas season approaches, that the doctor has not thought the matter through very carefully.

Another viable route for communication between doctors is a letter to the editor of IOWA MEDICINE.

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Doctor-to-Patient

Letter to My Family Doctor

SHEILA D. SIDLES
Centerville, Iowa

Are technological advances taking the art out of the practice of medicine? Are physicians forgetting the human touch that is so important to patients? In this letter to her daughter, a resident physician, Sheila Sidles, Centerville attorney, relates personal experiences which demonstrate the need for one-on-one communication between doctors and patients. All the stories are based on real incidents, with names and circumstances altered. Ms. Sidles is a former consumer member of the Iowa State Board of Medical Examiners.

Dear Dr. Madge:

When you began your first year of residency we had a long discussion on how doctors are viewed by their patients and the image you hope to project in your practice. When we talked recently I sensed you feel the image of the doctor is becoming blurred in patients' minds. You were wondering if this is caused by a lack of communication between doctors and patients. This started memories flowing. Let me relate some old personal stories and current experiences of my friends. Perhaps they will help you, as you start your second year of residency, to develop a communications link with your patients.

Do you remember my stories of my sickly childhood? Doctor Ben and I had a wonderful communications link. The minute mother appeared in my sickroom door to announce Doctor Ben was on his way I started getting better. I think that I had him mixed up with God — a white-haired man in a white coat, taking care of me. I placed myself in his hands and became well. If that is the image you plan to project, the image of God will have to change to a brown-haired woman in white. I suspect you younger doctors may not want that responsibility. However, I read a quote last week from a doctor who said, "I don't want my patients to know any more than I tell them." The God image does persist.

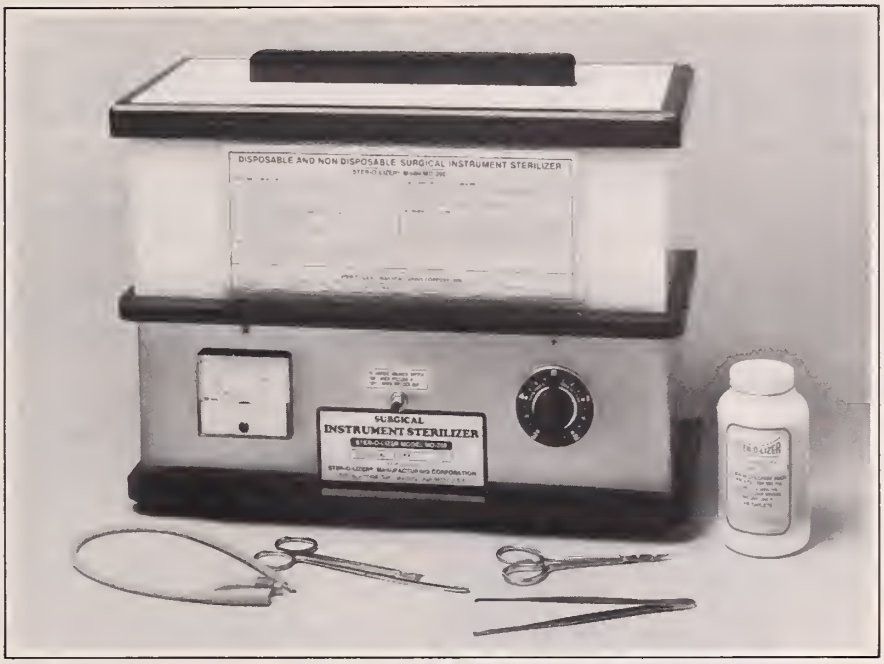
Some of my friends do not seem comfortable with the other extreme, the idea that patients should be fully involved in their own health care. For example, our diabetic friend, Joe, refuses to go back to the doctor until he meets the weight loss goal he helped set, even though he isn't losing weight and is having trouble keeping his insulin in balance. He looks terrible, but he is scared the doctor will scold him.

Jim refuses to divulge anything to his doctor, although he goes in regularly to have his high blood pressure checked. He feels if doctors are so darn smart and charge so much, they ought to be able to figure out what is wrong. He moans to me about his aches and pains but refuses to tell his doctor. If there is something really wrong I suppose he will threaten to sue the doctor for a misdiagnosis. His wife and I tried to convince him to have a complete work-up, but he thinks it would be too expensive. How much does a physical cost? Do all doctors charge the same? Are there different types of exams that would be less

(Please turn to page 510)

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expensive? If I asked my doctor could he tell me? What would be wrong with advertising the price of certain regular procedures?

The doctor I now go to is really excited about preventive medicine and getting his patients involved in their treatment. It is hard not to get involved if you read or watch television. The media appears to be assuming the burden of educating patients. Whom do we trust? As I sipped my morning coffee, a half-page ad in the *Wall Street Journal* screamed its message at me. "Chest Pain You Should Tell Your Doctor About." In the adjoining column a cartoon chicken rid herself of cholesterol by laying an egg. Real life health should be so easy. I turned to the *Des Moines Register*, and the front page headline told me "Stress Takes a Toll On Women Who Succeed." A tension headache started to develop before I left for the office. As I passed the TV, my favorite television doctor was advising me about a great health insurance plan. As a family of self-employed people we can't afford those plans. My plan is to remain healthy at least until I reach Medicare age.

Remember how I encouraged my family to avoid junk foods and to eat a balanced diet? I have heard medical doctors don't study nutrition. How much nutrition did you learn in medical school? With all the new developments in medicine, will you have time to keep up on nutrition news? Should I plan to learn from the Extension Service, the U.S.D.A. and the Center For Science In The Public Interest? At least I don't see as many ads for fad diets. Instead I read articles of a more scientific nature that talk about "eicosanoids" as if I know what they are and could select foods that do (or is it don't?) provide them. At least the grapefruit diet was simple. Do you worry that if more people start living healthy life-styles there will be less need for doctors? And how can a patient know if a doctor is keeping abreast of the new developments? I had a list of questions to ask at my last visit but the doctor seemed so busy I didn't take his time.

That specialist I went to a few years ago got huffy and suggested I get a second opinion if I didn't trust his judgment. I was only trying to find out if he had the latest equipment for my proposed surgery. Would I have had the right to my X-rays and other test results? I didn't want to upset him by asking, especially if I planned on putting my life in his hands. The thought of having to pay for all those tests twice led me to not seek a second opinion.

There is so much new research in joint replacement and organ transplants. These areas seem to be changing so fast I advised my golfing friend to postpone her knee surgery for a while. Isn't that what friends are for? She was complaining about the orthopedic surgeon's high fees even though her insurance will pay for most of it. I guess the fees have to be high to cover malpractice insurance costs. For those fees a patient should expect a satisfactory outcome. Why do all doctors think they will be sued? Is medicine becoming a science instead of the art it was when I was growing up? I don't know what level of care to expect from my doctor anymore.

I hope these stories will give you insight into how to communicate with your patients, although I confess I don't think patients always know what they want. In closing I offer you one bit of advice. Spend some time holding your patient's hand. The cold machines of technology, "do it yourself" preventive medicine and the computerization of symptoms may help us live longer; but when the body hurts and the pain makes us cry, the touch of a hand and an "I care" are still good medicine.

Much love always,

Mom

DATE CHANGED FOR 1987 SCIENTIFIC SESSION/ ANNUAL MEETING

The dates of the Scientific Session/Annual Meeting have been changed to Friday, April 3; Saturday, April 4 and Sunday, April 5 at the Hotel Savery.

Apparently, when possible dates were discussed with the Hotel Savery staff, the wrong calendar was utilized and we were unaware the weekend chosen was Easter weekend. We regret any inconvenience the date change may cause to IMS members, especially officers, delegates and alternate delegates.

The Hotel Savery has advised that because of any inconvenience, it is reducing its regular room charge and rooms will be available at a flat rate of $50 per night (single or double).

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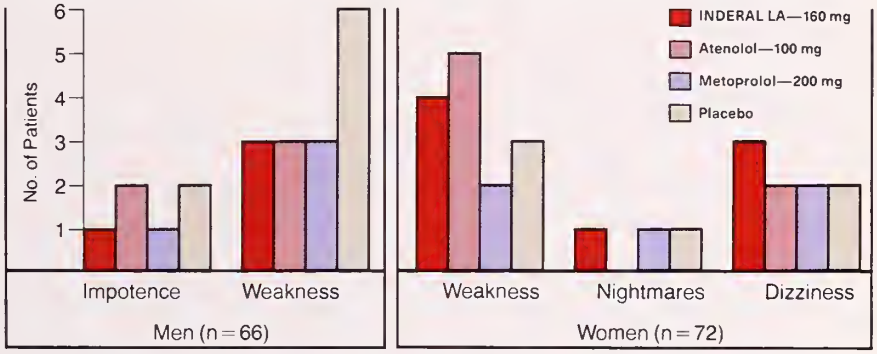
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Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)— PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS: Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia, congestive heart failure, intensification of AV block, hypotension; paresthesia of hands; thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation; mesenteric arterial thrombosis; ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash; fever combined with aching and sore throat; laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis; nonthrombocytopenic purpura; thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence; and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System: Dizziness, vertigo, paresthesias, headache, xanthopsia.

Hematologic: Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura, photosensitivity; rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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REFERENCE:

1. Ravid M, Lang R, Jutrin I. The relative antihypertensive potency of propranolol, oxprenolol, atenolol, and metoprolol given once daily. *Arch Intern Med* 1985;145:1321–1323.

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Doctor-to-Nurse

Team Effort

KAY MYERS, R.N., M.A.
Des Moines, Iowa

High quality communication between physicians and nurses is vital to meeting patient needs. Kay Myers, Executive Director, Iowa Nurses' Association, provides a nurse's perspective on how physicians can improve communication with other members of the health care team.

A PATIENT'S LIFE may depend on the quality of communication between physicians and nurses.

Researchers at George Washington University in Washington, D.C., tracked 5,000 patients in 13 hospitals. They compared the number of likely deaths (based upon the severity of illness) among patients admitted to the intensive care unit and the actual number of deaths. They discovered the hospital with the best performance (Hospital No. 1) had a death rate 41% lower than predicted. The hospital with the worst performance (Hospital No. 13) had a death rate 58% higher than expected.

In reporting their findings in the *Annals of Internal Medicine* (March, 1986) researchers concluded in Hospital No. 1 "excellent communication between physicians and unit nursing staff was ongoing to ensure all patient care needs were met."

In Hospital No. 13, researchers reported admitting physicians and nursing staff communicated poorly. There was no policy for routine discussion of patient care and no coordination of staff capabilities and clinical demands. "There was an atmosphere of distrust," researchers noted.

These findings demonstrate what those in health care have known for a long time — communication between health professionals fosters trust and improves the quality of care. In these days of escalating liability, a multidisciplinary approach, with each party interacting effectively, is the most desirable.

Several basic principles of communication should be employed by physicians and other health professionals, no matter what the setting:

Learn about each other — Being aware of the educational and experiential background of health professionals increases understanding of their ability to function as part of the team. Knowing the legal requirements for their practice increases mutual confidence. For instance, registered nurses, licensed under Chapter 152, Code of Iowa, legally practice without supervision and are accountable for their own acts or omissions. Nurses are required to utilize nursing diagnosis in the practice. Physicians who do not understand this concept are at a disadvantage in understanding how nurses practice.

Respect the expertise of others — Though many health care professionals may not have higher academic degrees, they have expertise in specific fields. The pharmacist's knowledge of medications can be utilized effectively by those who do not have the same centralized background. The social worker's knowledge of community and human resources must be part of the team's functioning. The life-or-death

environment of intensive care units emphasizes the highly technical skill level of the registered nurse. The University of Iowa's attempts to increase the nutrition knowledge of medical students is an excellent example of medicine's recognition of the expertise of registered dieticians. This should lead to better communication between the disciplines.

Communication efforts should be ongoing — By maintaining channels of communication, both informal (on site in the clinical area) and formal (regular meetings according to policy), the health team can function at a higher level. By participating in health team conferences, joint practice committees and community projects, physicians and other health professionals can develop communications skills. Ongoing communication demands constant effort. The IMS's request for this article and meetings of the RN/MD Liaison Committee are excellent examples of efforts to keep communication channels open.

When I was asked to write this article, I contacted representatives of other health care professions and members of the Iowa Nurses' Association. I asked what they would like to tell doctors about communicating better. The overwhelming response was that each health professional desires to be treated as a colleague in his/her area of expertise. This fosters better communication between doctors and others and results in better patient care.

"In these days of escalating liability, a multidisciplinary approach, with each party interacting effectively, is the most desirable."

As the researchers in Washington, D.C. stated, "The highest quality of care appears to require a high degree of involvement by both dedicated physicians and nurses in ongoing clinical care." That, after all, is what health care is all about.

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Doctor-to-Legislator

Communicate With Your Lawmaker

C. ARTHUR OLLIE
Clinton, Iowa

Legislators are influenced by the opinions of their local constituents, especially if those opinions are expressed effectively. Here, C. Arthur Ollie, State Representative, District 38, gives advice on how to communicate with Iowa's lawmakers. Rep. Ollie is a member of the Human Resources Committee and the Health and Human Rights Appropriations Subcommittee.

COMMUNICATION AND INFORMATION are to the legislative process what coal and iron ore are to steel making. If one is missing or of inferior quality, the final product is affected.

Some citizens, without ever communicating agreement or disagreement to their legislator, react with joy or anger following passage of a bill in which they have an interest. Even worse, citizens are often unaware of legislation until it affects them.

This is not surprising since the legislative process is complex and proceeds at a very erratic pace. At times, it moves with agonizing slowness; other times with breathless speed. The process can be incredibly uninteresting and intimidating. Some people don't feel qualified to make contact with the participants.

Conversely, some citizens feel the legislative process is just "politics" and it is beneath them to get involved. Others believe the outcome is predetermined.

Though some of the above may be true to some degree, I believe the legislative process depends on citizen input. When it is absent, whether due to ignorance, apathy, intimidation or condescension, the final product is undesired by legislators and undeserved by society.

The average legislator tries hard to establish communication links with his or her constituents. Common devices employed are surveys, town meetings, newsletters, public appearances, "listening posts," neighborhood walks, etc. Yet, legislators are often amazed at how difficult it is to be heard or to measure public opinion on an issue.

I often hear the complaint that the legislature "sneaked" a law into effect. This is not possible since no action can occur out of the media's sight. Most legislative actions are fully reported by wire service, radio and television reporters. In spite of this, much goes unnoticed — not because of secrecy or lack of coverage but because of barriers to communication.

Establishing a communication link with a legislator is not difficult. First, you must know who your legislator is, and many people do not know who represents them. In my 3 elections, I have had thousands of fliers distributed containing my picture, beliefs and accomplishments. I knock on 4 or 5 thousand doors per election. I attend countless meetings, hold public meetings and send a stream of informational news releases to local media. Yet, I constantly meet constituents who do not know who I am.

I also find many people do not have a clear idea of what I do, where I do it or when I do it. The legislative session typically runs from January to late April or mid-May, yet people ask year-round, "How are things in Des Moines?" I am often asked when I will be returning to Washington! I realize this confusion is not unusual, and it helps politicians keep their egos to a normal size. However, knowing who your legislators are and what they do is the first step toward effective communication.

"I often hear the complaint — the legislature "sneaked" a law into effect. This is not possible since no action can occur out of the media's sight."

There are many ways to establish communication with a legislator. Most legislators hold meetings. Many will accept invitations to attend regular meetings of various organizations or ad hoc meetings for particular purposes. In Clinton we hold monthly Saturday morning meetings involving the Clinton County Medical Society and the county's legislative delegation. This is a highly satisfactory format for communicating. As a member of the Human Resources Committee and its health subcommittee, the opinions of local physicians are very valuable to me. I hope I provide the doctors with useful information as well.

The agenda for the breakfast meetings contains specific bills of interest. The agenda is usually set by the physician in charge, but legislators are free to contribute items. It is essential to establish an agenda-setting process. The life of a legislator is busy. Nothing is so frustrating as sitting through a meeting with no apparent purpose.

Any exchange of views should be open and frank. It is important to communicate what you believe in an honest, matter-of-fact way. It is not necessary to be afraid of disagreement. Disagreement is a daily occurrence in the legislature. However, it is important to be respectful of different opinions. Communication is greatly facilitated if everyone understands they can speak freely and have their views received with respect, even if they are not shared.

Obviously, this type of meeting is designed to influence a legislator. However, wise constituents will realize influence is often indirect. You cannot force someone to agree with you. Convey information and let your arguments speak for themselves.

It is an excellent idea to designate someone in your group as a contact person. Questions often arise and a legislator needs information quickly. It is very helpful to have an established contact who can provide the information and be a spokesperson for the group. The Iowa Medical Society has very fine representation in the Statehouse lobby, but legislators frequently want contact with someone "back home" to assure local opinion is represented. These contacts can often be crucial in determining a vote.

There are other opportunities for communication with legislators. Many community organizations hold regular public forums. The Chamber of Commerce, AAUW, League of Women Voters, labor unions and professional organizations may welcome your group as a co-sponsor and will appreciate your attendance.

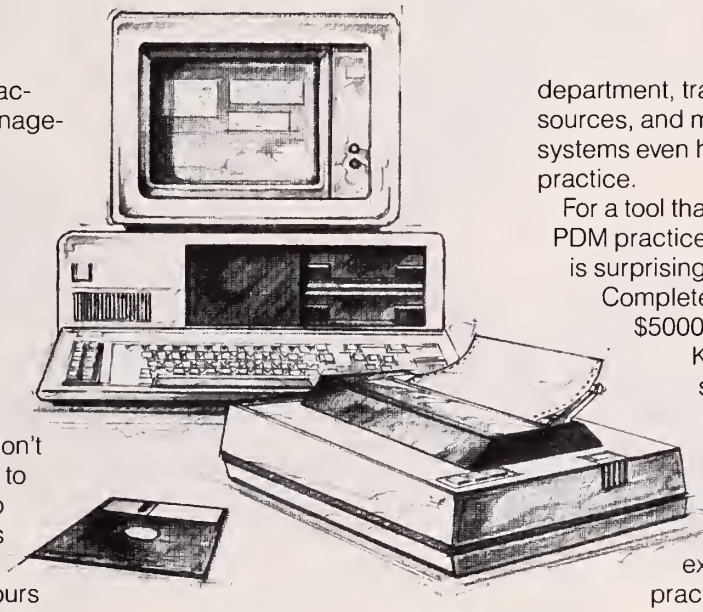
"Never underestimate the impact of a personal letter, phone call or even a telegram. I feel letters are most effective."

Never underestimate the impact of a personal letter, phone call or even a telegram. I feel letters are most effective. They can be read at convenient times and saved for future reference. A clearly written letter can be very influential.

When contacting a legislator, be direct and frank without being abusive. Do not threaten; do not demand. If you want information, say so. If you want to encourage a particular vote, say so. If you want to express disappointment, say so.

Don't be surprised if you experience differences of opinion. On most issues there are advocates and opponents. Most legislators seek information to help them do the "right thing." It is not reasonable to expect anyone to agree with you all the time, but a mutually useful line of communication can be established that can help our democracy work.

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Jane F. Coughlin

QUESTIONS AND ANSWERS



TAKE TIME TO TALK

Effective communication is a critical issue for organized medicine and individual physicians. Jane Coughlin, Director of Consulting Services for the American Medical Association Division of Communications, discusses the AMA's responsibilities in communicating with health care consumers and improving the image of physicians. She outlines the responsibilities of individual physicians in these areas.

How important is effective communication in the practice of medicine?

It is critical. Without it, patients feel disconnected from their care and physicians don't know what information patients need.

There is no better perception established than when a warm, caring physician walks into an exam room and lets the patient know there is time to talk about what's wrong. The amount of time a physician spends with a patient is often a factor in the decision to sue. The judgment is not a clocking of minutes but rather a perception of whether or not the physician provided focused and caring attention.

A colleague used to joke that the reason patients are uncomfortable talking to their doctors is "only one of you has clothes on." Effective communication means equal communication.

What are the responsibilities of organized medicine in communicating with health care consumers and groups such as legislators and the media?

Organized medicine is uniquely suited to speak on behalf of physicians to a variety of audiences. County and state medical societies know local issues and can represent their members' interests better than any other organization. National medical associations are best equipped to address broader issues and federal legislation.

The responsibility of each medical society is clear. Organized medicine forms the collective voice of physicians. Whether urging passage of legislation or making the public aware of medicine's changing environment, organized medicine has the resources and credibility to speak with greater authority than the individual practitioner.

What are the responsibilities of individual physicians regarding communication with patients?

Physician-patient communication is a 2-way street; but in reality, physicians probably bear more of the responsibility. Why? Because they are perceived as 'too busy' or because a patient fears his or her question is 'dumb.'

In the ideal physician-patient exchange, your patient asks intelligent, probing questions about the treatment you recommend or the drug you prescribe. He tells you about other drugs he's taking or about a bad reaction to a similar drug. You respond by providing information in language he understands. You don't part company until both are satisfied.

What is more often the case? The patient — too embarrassed to ask for more information and convinced you're in too big a hurry to stay longer — smiles and mutely accepts the in-

(Please turn to page 520)

QUESTIONS AND ANSWERS

(Continued from page 519)

structions you give. He then goes to the drugstore and asks the pharmacist a host of questions about the drug you prescribed.

Someone has to break the ice in these situations; you hold the pick.

What can individual physicians do in their offices to improve the public's image of the medical profession? How can physicians improve their communication skills?

Image enhancement in the office can be as simple as a clean, well-organized reception area with current magazines and as critical as office personnel who represent you the way you want to be represented. The attention a physician pays to his patient's comfort is demonstrated throughout the office visit. When your reception area truly becomes a "waiting" room, be sure your staff informs the patient why there is a delay and how long the delay will be. From the moment your patients walk in the door, to when they schedule another appointment, or make arrangements to pay your fee, they are forming impressions about you and physicians in general.

How can you improve communication? Ask for feedback from office personnel and patients. Some physicians use practice surveys. If the right questions are asked, you can learn where weaknesses are. Ask your office personnel what comments or questions they hear from patients after you've seen them. Provide patient education materials in the reception area. Information pertinent to your speciality is also pertinent to your patients.

> ***"The public looks to physicians and organized medicine for state-of-the-art unbiased information."***

Take a skill-building workshop. The AMA offers spokesman training at several national meetings and to individual societies. Many medical societies arrange for trainers to provide seminars for physicians who want to enhance their communication skills. The improvement of public speaking is one focus of these training sessions; another is eliminating jargon from the physician's vocabulary. When you find simple alternatives to the words that only your colleagues understand, you'll become a better communicator with everyone else.

We understand the AMA is spearheading a campaign to improve the public image of physicians. What are the activities and goals of this program?

The information campaign focuses primarily on the public's awareness of issues in medicine. One of our goals is improvement of the image of physicians.

The AMA seeks to inform the public about changes in the delivery of medical care and about habits that affect one's health. The public looks to physicians, and organized medicine, for state-of-the-art, unbiased information. The AMA has designed a campaign that will provide information so people can make intelligent health care decisions. A tangential benefit from the program is physicians are portrayed as patient advocates by providing such information.

For years, the AMA has been committed to working with the media, creating public serv-

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ice messages, producing daily radio news and feature spots and assisting the Federation with local public relations. That work continues. However, last year, formal testing of communications techniques was implemented. Three medical society pilot projects were created and carried out in the fall of 1985:

- A health fair featuring 120 Vermont physicians demonstrating today's high-tech medical practice.
- A 90-minute PBS television program in Louisville, Kentucky with clips of the AMA film "First Comes Caring" and a reactor panel of physicians from the Jefferson County Medical Society.
- Test flights of 2 television commercials showing the plight of physicians leaving practice due to unaffordable or unavailable liability insurance. The commercials were shown for a 2-week period in Des Moines and Kansas City and were placed with the assistance of the Polk County Medical Society and the Jackson County (MO) Medical Society.

These pilots were evaluated and their value as communications tools confirmed. Recently, the AMA Division of Communications produced booklets on how state and county medical societies can implement similar programs. The books are available free to medical societies and individual physicians.

At the June 1986 Annual Meeting, the House of Delegates reaffirmed the AMA's commitment to public awareness activities. Next month, the AMA Board of Trustees will present at the Interim Meeting in Las Vegas its plan for public awareness activities for 1987 and beyond. The plan is based on criteria defining what such a campaign should accomplish. The criteria specifically cite the importance of Federation involvement and the patient advocacy role of physicians.

The campaign is based on the desire of many AMA members to inform the public about the changing environment of medicine and what those changes mean to patient-physician relationships. The campaign will have a 2-pronged approach: to aid the public's understanding of how medicine will be practiced in the future and to deliver public health messages.

These new focused public awareness activities mean expanded communication between the AMA and physicians and between physicians and patients.

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Case Histories of Cardiac Transplantation and Artificial Heart Program

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Cardiac transplantation and cardiac support systems are becoming more useful for clinical treatment of patients with endstage cardiac decompensation. This report describes case histories of 8 patients — 3 permanent left ventricular support and 5 cardiac transplantion — at Mercy Hospital Medical Center (MHMC), Des Moines. Difficulties with both programs are discussed. The need for a joint program of circulatory support and cardiac transplantation is emphasized.

IMPROVEMENTS IN TECHNOLOGIES associated with cardiac transplantation and artificial heart implantation have allowed a wider clinical application of these procedures.[1-7] The concept of replacing a diseased heart with another heart or an implantable blood pump has intrigued physicians and scientists for over a century. A program of cardiac transplantation and circulatory assistance allows these services to compliment each other. Success of such a program is dependent upon the multiple disciplinary supportive services and the commitment of the hospital administration and the community.

Permanent Left Ventricular Support

Extension experience with a variety of temporary left ventricular support systems led to development of a permanent ventricular support system.[6-21] Three patients with end stage cardiac decompensation who were not candidates for cardiac transplantations had per-

The authors are associated with the Cardiac Transplantation and Artificial Heart Program at Mercy Hospital Medical Center in Des Moines.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF NOVEMBER 1986

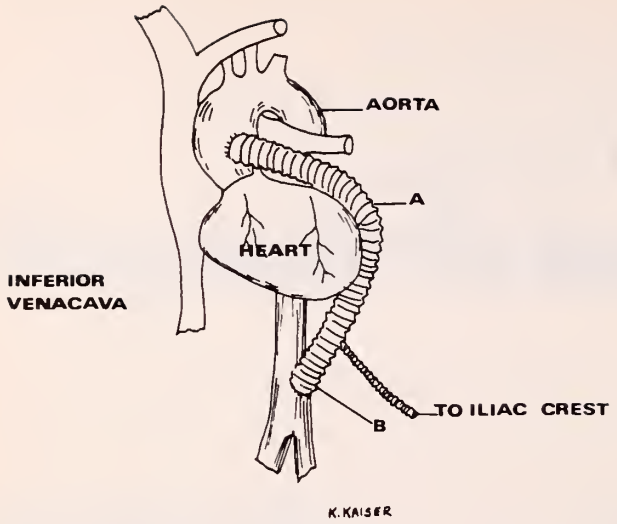


Figure 1

manent left ventricular support pumps implanted and are described here.

Parallel Aortic Pump

Cases No. 1 and 2

Two patients with chronic end-stage left ventricular failure which could not be remedied by conventional medical or surgical therapy had permanent parallel aortic pumps (PAP) inserted. Two men aged 55 and 69 were extensively evaluated by clinical and invasive techniques. Both had terminal ischemic cardiomyopathies, mitral regurgitation and severe rhythmic and metobolic disturbances. Both were on maximum medical therapy including vasodilators. Both patients had sustained cardiovascular collapse and were successfully resuscitated with an intraaortic balloon pump (IABP) but could not be weaned from the pump. With strict informed consent, 40-cc PAP was implanted in the first patient (1977) and 100-cc PAP in the second patient (1978).

The PAP is a polyurethane pumping chamber sandwiched between 2 dacron tube grafts. The smaller tube graft is inserted into the larger. It was implanted via a left thoractomy without cardiopulmonary bypass and without disturbing the flow into the descending thoracic aorta. The inlet and outlet ports were anastomosed end to side to the promixal and distal portions of the thoracic aorta. A pneumatic driveline, encased in Dacron velour, was brought to the outside through the left iliac crest (Figure 1). The first patient used a standard balloon pump console and the second a modified portable drive unit to actuate the PAP. Timing was initially synchronized with the ECG and arterial waveform. Later, noninvasive chronic timing was achieved by ECG, doppler or finger plethysomograph.

Both patients stabilized hemodynamically, allowing normalization of metabolic deficiencies. Both progressed from continuous pumping to intermittent pumping. The first patient developed stress gastritis and uncontrollable gastrointestinal (G.I.) hemorrhage. He underwent emergency gastrectomy but expired on the 39th day post-PAP implant of complications related to the G.I. bleeding.

The second patient also had an excellent hemodynamic response but developed complications of his chronic obstructive pulmonary disease. He required tracheostomy with intermittent ventilatory support. He arrested and expired on the 34th day post-PAP implant. At autopsy in both patients, the PAPs were patent and well healed. There were no signs of infection, clot or thromboembolism. The transcutaneous connector was solidly healed into the iliac crest.

Case No. 3

A 35-year-old moribund female with end-stage cardiomyopathy complicated by severe diabetes and obesity had a permanent intraaortic balloon inserted via the left iliac artery. The air hose, covered with Dacron velour, was exteriorized via the iliac crest as for the PAP. After 2 weeks of continuous pumping, cardiovascular and metabolic stabilization was achieved. A program of in-hospital intermittent pumping, followed by a program of outpatient pumping, was developed. The patient returned to an active life. Outpatient pumping was performed periodically, similar to the regime for hemodialysis. The patient died 3 months post pump implant, presumably of an arrhythmia.

Cardiac Transplantation

Five patients underwent orthotopic cardiac transplantation between July, 1985 and April 1986 and are described here.

Case No. 4

PS is a 56-year-old male who presented to MHMC Transplant Screening Committee in May of 1985 for consideration of cardiac transplantation. The patient had a cardiac history dating back to 1971 when he underwent coronary artery revascularization at Cleveland Clinic, Cleveland, Ohio. Cardiac decompensation progressed slowly over the next 12 years secondary to progressive ischemic cardiomyopathic problems. Subsequent cardiac catheterization revealed very poor left ventricular function which precluded conventional medical or surgical therapy.

Because this patient demonstrated a stable psychosocial profile and the ability to rehabilitate, cardiac transplantation was performed in July, 1985. The patient made an uneventful recovery from his transplant and was discharged on the 13th postoperative day. He is being followed in the cardiac transplant clinic.

Case No. 5

MM is a 38-year-old male who had a 3-year history of a presumptive viral cardiomyopathy. Multiple hospitalizations due to gradual cardiac deterioration brought him to MHMC in August, 1985. Cardiac catheterization revealed normal coronary arteries with marked reduction in left ventricular function.

While in the hospital continued deterioration occurred despite aggressive medical therapy. He was accepted by the Cardiac Transplant Screening Committee for transplantation. He underwent uneventful cardiac transplantation on November 2, 1985 and was discharged on the 35th post transplant day. He is being followed in the cardiac transplantation clinic.

Case No. 6

RM is a 7-year-old white male followed since birth by the pediatric cardiologic service at MHMC. He has a history of endocardial fibroelastosis and required multiple hospitalizations over the years for treatment of congestive heart failure. He was admitted to MHMC on November 7, 1985 due to severe congestive heart failure. In spite of aggressive and intensive medical therapy, he continued to deteriorate. Cardiac transplantation was recommended. Cardiac catheterization revealed severe pulmonary hypertension (20 wood units), mitral and tricuspid valve insufficiency and markedly depressed ventricular function. Intensive pulmonary vasodilators were infused for one week. His pulmonary vascular resistance was reduced to about 6 wood units.

He underwent cardiac transplantation on November 29, 1985. The patient weighed approximately 30 pounds at transplant; and the donor weighed 90 pounds. In spite of a stormy early postoperative course, he made a good recovery and was discharged from the hospital on the 27th day post transplantation. He has returned to school and is followed in the cardiac transplant patient clinic.

Case No. 7

SB is a previously healthy 38-year-old-female who developed a presumptive acute viral cardiomyopathy. Due to severe cardiac decompensation, she was hospitalized on November 27, 1985. She underwent cardiac catheterization which revealed findings consistent with a congestive cardiomyopathy severe cardiac decompensation. She transferred to MHMC on December 8, 1985 for cardiac transplantation.

Because of severe and continued cardiac decompensation resulting in cardiogenic shock, acidosis, and respiratory and cardiac arrest, she required endotracheal intubation and massive amounts of cardiotonic drugs to maintain circulation. Further deterioration occurred. Venoarterial pumping with a centrifugal pump was initiated December 19, 1985 as an intermediate step until a donor heart could be obtained. She was maintained on the pump for approximately 50 hours and underwent a successful cardiac transplantation.

She was discharged from the hospital on the 28th post transplant day and readmitted on January 21, 1986 with an episode of acute rejection. Rejection was reversed with pulsed high dose steroids and anti thymocyte globulin. The patient expired on the 20th day after readmission of complications secondary to cytomegalic viremia and sepsis.

Case No. 8

RK is a 38-year-old male with a known history of idiopathic cardiomyopathy. Hemody-

(Please turn to page 526)

namic instability resulted in hospitalization in April of 1986. Cardiac catheterization revealed markedly reduced cardiac function and normal coronary arteries. He transferred to MHMC and was supported with cardiotonic drugs and an intraaortic balloon pump until a donor heart was found. He underwent cardiac transplantation on April 14, 1986 and is presently recovering.

"The relationship of mechanical heart systems and cardiac transplantation now involves using circulatory support system as an intermediary step until a cardiac transplant can be performed."

Discussion

Artificial organ and cardiac transplantation has been a major interest of our group. Extensive laboratory and clinical research has led to extensive publications on these subjects.[6-21] Participation by Dr. Phillips in the initial clinical application of temporary and permanent left ventricular support systems in the 1960's and 1970's has allowed translocation of that experience to MHMC.[6, 9-15, 18] In addition, his experience with the first 2 human heart transplants in the United States and continued experimental work by Drs. Phillips, Zeff and Kongtahworn with cardiac transplantation in the 1970's and 1980's have allowed development of cardiac transplantation at MHMC.

The investigative and clinical experience in the 3 patients with permanent left ventricular assist pumps demonstrates the feasibility of such systems and warrants continued laboratory and clinical trials. The experience with cardiac transplantation at MHMC has demonstrated feasibility of such a procedure outside of a strictly "university" environment. The use of venoarterial pumping in case no. 7 demonstrates the need for both services to be readily available and maintained by an experienced team. Continued growth in these areas will allow better quality and more extensive care for patients requiring such services.

Heart donor availability is a major problem for Mercy's program. Of the 5 cardiac transplants performed to date, no donor was obtained via the University of Iowa organ retrieval system. One donor was in house and the others came via state organ retrieval programs requiring long range procurement procedures. (Table I.) In addition, 4 patients (2 adults and 2 children) who were being considered for cardiac transplantation died before donor organs became available. Nearly one half of the patients awaiting cardiac transplantation at MHMC died before a donor organ was available.

The growth of an active adult and pediatric cardiovascular medicine, surgical and anesthesia service over the past 11 years, supportive services such as immunology, pathology, and infectious disease, and excellent paramedical, administrative, rehabilitation and community educational programs have allowed the growth and success of the cardiac transplant and artificial organ services at MHMC.[22]

TABLE I

Potient NO.	Donor Locotion	Ischemic Time	Tronsport Mode
1	In House	0 Hrs. 38 Min.	None
2	Forgo, ND	2 Hrs. 28 Min.	Jet & Ambulonce
3	Houston, TX	3 Hrs. 17 Min.	Jet & Helicopter
4	Deorborn, MI	2 Hrs. 53 Min.	Jet & Ambulonce
5	Dollos, TX	3 Hrs. 5 Min.	Jet & Ambulonce

Summary

The relationship of mechanical heart systems and cardiac transplantation now involves using circulatory support system as an intermediary step until a cardiac transplant can be performed. Transplantation does not eliminate the need for left ventricular and artificial heart pumps. A number of centers use left ventricular support or artifical heart pump as the intermediate step prior to cardiac.

Experimental trials with the total artificial heart hold promise for the future. Our patient experience, to date, indicates the ability of MHMC to fulfill these needs.

References

References noted in this article are available either from the authors or from the editors of IOWA MEDICINE.

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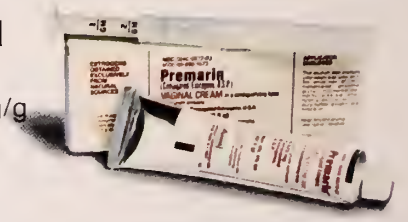
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BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION AND PATIENT INFORMATION, SEE PACKAGE CIRCULARS.)*

PREMARIN® Brand of conjugated estrogens tablets, USP
PREMARIN® Brand of conjugated estrogens Vaginal Cream in a nonliquefying base

1. ESTROGENS HAVE BEEN REPORTED TO INCREASE THE RISK OF ENDOMETRIAL CARCINOMA

Three independent case control studies have reported an increased risk of endometrial cancer in postmenopausal women exposed to exogenous estrogens for more than one year. This risk was independent of the other known risk factors for endometrial cancer. These studies are further supported by the finding that incidence rates of endometrial cancer have increased sharply since 1969 in eight different areas of the United States with population-based cancer reporting systems, an increase which may be related to the rapidly expanding use of estrogens during the last decade. The three case control studies reported that the risk of endometrial cancer in estrogen users was about 4.5 to 13.9 times greater than in nonusers. The risk appears to depend on both duration of treatment and on estrogen dose. In view of these findings, when estrogens are used for the treatment of menopausal symptoms, the lowest dose that will control symptoms should be utilized and medication should be discontinued as soon as possible. When prolonged treatment is medically indicated, the patient should be reassessed on at least a semiannual basis to determine the need for continued therapy. Although the evidence must be considered preliminary, one study suggests that cyclic administration of low doses of estrogen may carry less risk than continuous administration; it therefore appears prudent to utilize such a regimen. Close clinical surveillance of all women taking estrogens is important. In all cases of undiagnosed persistent or recurring abnormal vaginal bleeding, adequate diagnostic measures should be undertaken to rule out malignancy. There is no evidence at present that "natural" estrogens are more or less hazardous than "synthetic" estrogens at equiestrogenic doses.

2. ESTROGENS SHOULD NOT BE USED DURING PREGNANCY

The use of female sex hormones, both estrogens and progestogens, during early pregnancy may seriously damage the offspring. It has been shown that females exposed in utero to diethylstilbestrol, a non-steroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated as not greater than 4 per 1,000 exposures. Furthermore, a high percentage of such exposed women (from 30% to 90%) have been found to have vaginal adenosis, epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are precursors of malignancy. Although similar data are not available with the use of other estrogens, it cannot be presumed they would not induce similar changes. Several reports suggest an association between intrauterine exposure to female sex hormones and congenital anomalies, including congenital heart defects and limb reduction defects. One case control study estimated a 4.7-fold increased risk of limb reduction defects in infants exposed in utero to sex hormones (oral contraceptives, hormone withdrawal tests for pregnancy, or attempted treatment for threatened abortion). Some of these exposures were very short and involved only a few days of treatment. The data suggest that the risk of limb reduction defects in exposed fetuses is somewhat less than 1 per 1,000. In the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well controlled studies that progestogens are effective for these uses. If PREMARIN is used during pregnancy, or if the patient becomes pregnant while taking this drug, she should be apprised of the potential risks to the fetus, and the advisability of pregnancy continuation.

DESCRIPTION: PREMARIN (conjugated estrogens, USP) contains a mixture of estrogens, obtained exclusively from natural sources, blended to represent the average composition of material derived from pregnant mares' urine. It contains estrone, equilin, and 17α-dihydroequilin, together with smaller amounts of 17α-estradiol, equilenin, and 17α-dihydroequilenin as salts of their sulfate esters. Tablets are available in 0.3 mg, 0.625 mg, 0.9 mg, 1.25 mg, and 2.5 mg strengths of conjugated estrogens. Cream is available as 0.625 mg conjugated estrogens per gram.

INDICATIONS AND USAGE: PREMARIN (conjugated estrogens tablets, USP): Moderate-to-severe *vasomotor* symptoms associated with the menopause. (There is no evidence that estrogens are effective for nervous symptoms or depression without associated vasomotor symptoms and they should not be used to treat such conditions.) **Osteoporosis (abnormally low bone mass).** Atrophic vaginitis. Kraurosis vulvae. Female castration.

PREMARIN (conjugated estrogens) Vaginal Cream is indicated in the treatment of atrophic vaginitis and kraurosis vulvae. PREMARIN HAS NOT BEEN SHOWN TO BE EFFECTIVE FOR ANY PURPOSE DURING PREGNANCY AND ITS USE MAY CAUSE SEVERE HARM TO THE FETUS (SEE BOXED WARNING).

Concomitant Progestin Use: The lowest effective dose appropriate for the specific indication should be utilized. Studies of the addition of a progestin for 7 or more days of a cycle of estrogen administration have reported a lowered incidence of endometrial hyperplasia. Morphological and biochemical studies of the endometrium suggest that 10 to 13 days of progestin are needed to provide maximal maturation of the endometrium and to eliminate any hyperplastic changes. Whether this will provide protection from endometrial carcinoma has not been clearly established. There are possible additional risks which may be associated with the inclusion of progestin in estrogen replacement regimens. (See PRECAUTIONS.) The choice of progestin and dosage may be important; product labeling should be reviewed to minimize possible adverse effects.

CONTRAINDICATIONS: Estrogens should not be used in women (or men) with any of the following conditions: 1. Known or suspected cancer of the breast except in appropriately selected patients being treated for metastatic disease. 2. Known or suspected estrogen-dependent neoplasia. 3. Known or suspected pregnancy. (See Boxed Warning.) 4. Undiagnosed abnormal genital bleeding. 5. Active thrombophlebitis or thromboembolic disorders. 6. A past history of thrombophlebitis, thrombosis, or thromboembolic disorders associated with previous estrogen use (except when used in treatment of breast or prostatic malignancy).

WARNINGS: Long-term continuous administration of natural and synthetic estrogens in certain animal species increases the frequency of carcinomas of the breast, cervix, vagina, and liver. There are now reports that estrogens increase the risk of carcinoma of the endometrium in humans. (See Boxed Warning.) At the present time there is no satisfactory evidence that estrogens given to postmenopausal women increase the risk of cancer of the breast, although a recent study has raised this possibility. There is a need for caution in prescribing estrogens for women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms. A recent study has reported a 2- to 3-fold increase in the risk of surgically confirmed gallbladder disease in women receiving postmenopausal estrogens.

Adverse effects of oral contraceptives may be expected at the larger doses of estrogen used to treat prostatic or breast cancer or postpartum breast engorgement; it has been shown that there is an increased risk of thrombosis in men receiving estrogens for prostatic cancer and women for postpartum breast engorgement. Users of oral contraceptives have an increased risk of diseases, such as thrombophlebitis, pulmonary embolism, stroke, and myocardial infarction. Cases of retinal thrombosis, mesenteric thrombosis, and optic neuritis have been reported in oral contraceptive users. An increased risk of postsurgery thromboembolic complications has also been reported in users of oral contraceptives. If feasible, estrogen should be discontinued at least 4 weeks before surgery of the type associated with an increased risk of thromboembolism, or during periods of prolonged immobilization. Estrogens should not be used in persons with active thrombophlebitis, thromboembolic disorders, or in persons with a history of such disorders in association with estrogen use. They should be used with caution in patients with cerebral vascular or coronary artery disease. Large doses (5 mg conjugated estrogens per day), comparable to those used to treat cancer of the prostate and breast, have been shown to increase the risk of nonfatal myocardial infarction, pulmonary embolism and thrombophlebitis. When doses of this size are used, any of the thromboembolic and thrombotic adverse effects should be considered a clear risk.

Benign hepatic adenomas should be considered in estrogen users having abdominal pain and tenderness, abdominal mass, or hypovolemic shock. Hepatocellular carcinoma has been reported in women taking estrogen-containing oral contraceptives. Increased blood pressure may occur with use of estrogens in the menopause and blood pressure should be monitored with estrogen use. A worsening of glucose tolerance has been observed in patients on estrogen-containing oral contraceptives. For this reason, diabetic patients should be carefully observed. Estrogens may lead to severe hypercalcemia in patients with breast cancer and bone metastases.

PRECAUTIONS: Physical examination and a complete medical and family history should be taken prior to the initiation of any estrogen therapy with special reference to blood pressure, breasts, abdomen, and pelvic organs, and should include a Papanicolaou smear. As a general rule, estrogen should not be prescribed for longer than one year without another physical examination being performed. Conditions influenced by fluid retention such as asthma, epilepsy, migraine, and cardiac or renal dysfunction, require careful observation. Certain patients may develop manifestations of excessive estrogenic stimulation, such as abnormal or excessive uterine bleeding, mastodynia, etc. Prolonged administration of unopposed estrogen therapy has been reported to increase the risk of endometrial hyperplasia in some patients. Oral contraceptives appear to be associated with an increased incidence of mental depression. Patients with a history of depression should be carefully observed. Preexisting uterine leiomyomata may increase in size during estrogen use. The pathologist should be advised of estrogen therapy when relevant specimens are submitted. If jaundice develops in any patient receiving estrogen, the medication should be discontinued while the cause is investigated. Estrogens should be used with care in patients with impaired liver function, renal insufficiency, metabolic bone diseases associated with hypercalcemia, or in young patients in whom bone growth is not complete. If concomitant progestin therapy is used, potential risks may include adverse effects on carbohydrate and lipid metabolism.

The following changes may be expected with larger doses of estrogen:

a. Increased sulfobromophthalein retention.

b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability.

c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by PBI, T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered.

d. Impaired glucose tolerance.

e. Decreased pregnanediol excretion.

f. Reduced response to metyrapone test.

g. Reduced serum folate concentration.

h. Increased serum triglyceride and phospholipid concentration. As a general principle, the administration of any drug to nursing mothers should be done only when clearly necessary since many drugs are excreted in human milk.

ADVERSE REACTIONS: The following have been reported with estrogenic therapy, including oral contraceptives: breakthrough bleeding, spotting, change in menstrual flow; dysmenorrhea; premenstrual-like syndrome; amenorrhea during and after treatment; increase in size of uterine fibromyomata; vaginal candidiasis; change in cervical erosion and in degree of cervical secretion; cystitis-like syndrome; tenderness, enlargement, secretion (of breasts); nausea, vomiting, abdominal cramps, bloating; cholestatic jaundice, chloasma or melasma which may persist when drug is discontinued; erythema multiforme; erythema nodosum; hemorrhagic eruption; loss of scalp hair; hirsutism; steepening of corneal curvature; intolerance to contact lenses; headache, migraine, dizziness, mental depression, chorea; increase or decrease in weight; reduced carbohydrate tolerance; aggravation of porphyria, edema; changes in libido.

ACUTE OVERDOSAGE: May cause nausea, and withdrawal bleeding may occur in females.

DOSAGE AND ADMINISTRATION:

PREMARIN® Brand of conjugated estrogens tablets, USP

1. *Given cyclically for short-term use only.* For treatment of moderate to severe *vasomotor* symptoms, atrophic vaginitis, or kraurosis vulvae associated with the menopause (0.3 to 1.25 mg or more daily). The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible. Administration should be cyclic (eg, three weeks on and one week off). Attempts to discontinue or taper medication should be made at three- to six-month intervals.

2. *Given cyclically:* Female castration. Osteoporosis. Female castration—1.25 mg daily, cyclically. Adjust upward or downward according to response of the patient. For maintenance, adjust dosage to lowest level that will provide effective control. Osteoporosis—0.625 mg daily. Administration should be cyclic (eg, three weeks on and one week off).

Patients with an intact uterus should be monitored for signs of endometrial cancer and appropriate measures taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

PREMARIN® Brand of conjugated estrogens Vaginal Cream

Given cyclically for short-term use only. For treatment of atrophic vaginitis or kraurosis vulvae.

The lowest dose that will control symptoms should be chosen and medication should be discontinued as promptly as possible.

Administration should be cyclic (eg, three weeks on and one week off).

Attempts to discontinue or taper medication should be made at three-to-six month intervals.

Usual dosage range: 2 to 4 g daily, intravaginally, depending on the severity of the condition.

Treated patients with an intact uterus should be monitored closely for signs of endometrial cancer and appropriate diagnostic measures should be taken to rule out malignancy in the event of persistent or recurring abnormal vaginal bleeding.

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COMMENTING EDITORIALLY



COMMUNICATION

"Words are one of our chief means of adjusting to all the situations of life. The better control we have over words the more successful our adjustment is likely to be." — Bergen Evans

"Almost all language is figurative and so far may obscure as well as illustrate the subject which it is used to denote." — Peter Mere Latham, 1789-1875

COMMUNICATION ENTAILS the interchange of thoughts or opinions. Such interchange can be verbal or in print, or by action. The familiar admonition that "actions speak louder than words" has true meaning. It is to that we address these comments.

This issue of IOWA MEDICINE is concerned with the medical professionals need to develop better communication skill in both personal and professional contacts. Clear and straight forward skills in communication lead to understanding. The skills of communication commence in early infancy, and become more proficient through the years by experience and training. The infant conveys ideas by coos, gurgles, cries, and facial expressions. The mother gains meaning from these traits and heeds to the infant's primitive communication efforts.

Language development follows at a rapid pace, and becomes very proficient in early childhood. Education and experience broadens the art of communication from the spoken to the written language, becoming more and more complex according to the station of life and the educational experiences. Yet, in many individuals there is a great amount of deficiency in the art of communicating. Here, then, we have to consider such attributes as timing, tact, courtesy and consideration. Some persons continue to lack these attributes of successful communication; others become very proficient by training and experience.

Physicians must be good communicators, for our entire professional purpose is to convey information to our colleagues and our patients. Should there be failure herein, there is failure of success in professional endeavor. There is a need for persons in our profession to be able to communicate in 2 distinct areas, with our colleagues wherein jargon may be employed, and with our patients to whom we must talk medicine in the layman's language. Such an ability must be cultivated.

There is another form of communication we unwittingly use too often. Body language, as it has been called, conveys ideas which may refute the spoken word. Our actions must serve to emphasize or strengthen our words. Nervous habits, side-glances, brusqueness, or poor control of the voice may convey messages of distrust or disdain to the listener. Though the words may imply sincerity, the actions might refute the entire message.

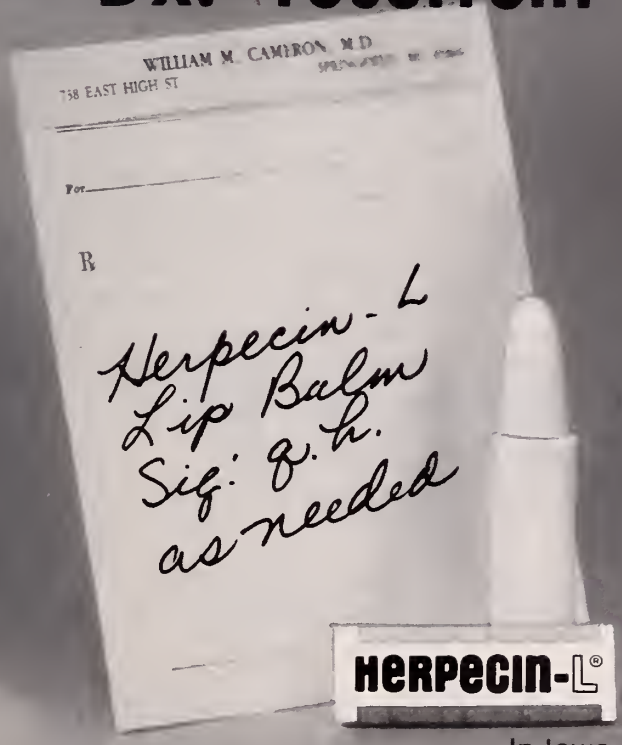
In past years, communication to the patient

by the physicians was not fully practiced. The physician "knew the answers," the patient "wouldn't understand anyway" so "why go into detail." Now our patients have a right to know, they desire to be informed, and our communication skills must be increased as the messages are presented in this issue of IOWA MEDICINE. We must communicate more effectively with our patients, our allied health personnel, our physician colleagues, and the public. There is another area (a subject of its own): we must communicate more effectively with our own families.

Practice effective, considerate communication. Consider how you present yourself to others. Communication is a skill; an art. Develop good skills and practice them in your daily life. The results will enhance success in your personal as well as professional life. — M.E.A.

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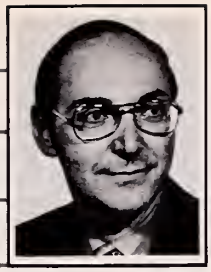
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



COMPUTERIZED CME

I HAVEN'T TAKEN THE PLUNGE YET and entered full sail into the modern educational applications of computers and video, but I can tell that the whole matter is getting close enough that one of these days it will simply engulf me, like it or not. And it will do so to — or for — you as well. Just how engulfed we become will depend on how long we'll live, though, because these things won't happen by the day-after-tomorrow.

But the evidence I saw presented, at a recent conference on technological applications to CME, started to soften my skepticism. A branch of the National Library of Medicine has been developing a most impressive videodisc instructional program, operated by natural language voice commands — now *that's* how to deal with us old fogeys who are keyboard-shy. You simply tell this simulation what kind of information you want, and it will appear in front of you, even with some of the history provided as dramatized flashback. No lists or cues are provided; the class or student must make independent choices, as in "real life," and those choices can generate a range of complications and several possible outcomes for the patient. Those research and development folks have spent a whale of a lot of time and money in this single prototype and have produced something analogous to a moon landing. But the time has come to face the reality of moon shots.

The use of more mundane videocassettes and videodiscs for CME is now at hand. And that's true also for computerized simulations and exercises for CME. Many companies are now hawking their wares — they're really here and for sale. The number of cases and problems per manufacturer isn't large, but we're past the stage of inventing the internal combustion engine — the horseless carriages are now on the road. These companies figure, rightly I suppose, that doctors and/or clinics and/or hospitals are so well revved-up with the necessary computers and players that everybody can be in the act. Even if that's not true for the O.F.'s (translate that F as fogey), they'll soon be washed away by that younger generation we hear of that's growing up agile and comfortable with the computers and their related educational software. As a clinching proof that the technology has arrived in full flower, I cite the existence of a journal, "Physician's Video Guide," that has already passed No. 8 of volume 1, which contains articles, news of physician video, editorials, cassette listings, and reviews of video packages and teleconferences. All this splendid guide to the perplexed is yours for an annual subscription fee of $15. Need there be any further proof of an established enterprise?

Even if that's not true for the O.F.'s (translate that F as fogey), they'll soon be washed away by that younger generation we hear of that's growing up agile and comfortable with the computers and their related educational software.

Some of the O.F.'s can change. Old dogs can learn lots of new tricks — it just takes longer and a greater commitment of time and dedication. But here's a nice comment that's applicable not just to children: "It is not the chocolates and the sponge cakes that strengthen the child's jaw muscles." That's not a literal comment from a physiologist, but a

(Please turn to page 540)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

LOW-OSMOLALITY RADIOGRAPHIC CONTRAST AGENTS

PRIOR TO 1978, the only water-soluble contrast agents available in the United States were the sodium and meglumine salts of diatrizoate (Renografin, Hypaque) and iothalamate (Conray). These substances become ionized in solution, resulting in 3 organically bound iodine atoms attached to a benzene ring for 2 particles in solution, an ionic ratio of 3:2, or 1.5. Because of the ionization, these older media have 5 to 8 times the osmolality of plasma or cerebrospinal fluid. This hypertonicity is primarily responsible for the burning discomfort experienced during intravascular injection. It is also partly responsible for the toxicity to the central nervous system, causing these substances to be unsuitable for injection into the subarachnoid space. The incidence of severe, life-threatening reactions to the older contrast agents is about 22 per 100,000 and death occurs in from 2 to 10 per 100,000 injections.[1] The ideal radiographic substance for intravascular and intrathecal use should be isotonic with plasma and CSF, readily excreted by the kidneys, nontoxic, and sufficiently radiopaque to yield good diagnostic images.

Metrizamide, the first nonionic contrast material, was developed in Norway.[2] It is a triiodinated compound derived from metrizoic acid and glucosamine. Since it does not ionize in solution, the ratio of iodine atoms to particles in solution is 3. At a concentration of 170 mg I/ml, metrizamide is isotonic with plasma and CSF. Under the trade name Amipaque, metrizamide became available in the United States in 1978 and has been used primarily for myelography and CT cisternography. Its high cost (about $80 per 10 ml) made its use for angiography impractical except in very special situations. Metrizamide is unstable in solution and is supplied as a lyophilized powder, which has to be reconstituted. Following injection into the subarachnoid space, headache, nausea, and vomiting are frequent complications. More serious reactions such as seizures, aseptic meningitis, allergic reaction, and mental confusion or transient aphasia occur in less than 1% of patients examined.[3] In myelography, metrizamide was a major improvement over the oily contrast media, since it does not have to be removed from the subarachnoid space and is suitable for intracranial studies in conjunction with pluridirectional or computed tomography. However, metrizamide is being replaced by the newer, safer, and less costly iohexol and iopamidol, which became available this year, and both are also safe for intravascular use. For intravascular studies only, ioxaglate, a low-osmolality ionic contrast agent, is also available.

Iohexol

Iohexol is a nonionic, water-soluble radiographic contrast substance. In aqueous solution, each triiodinated molecule remains undissociated, resulting in an ionic ratio of 3. The chemical structure is illustrated in Figure 1.

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

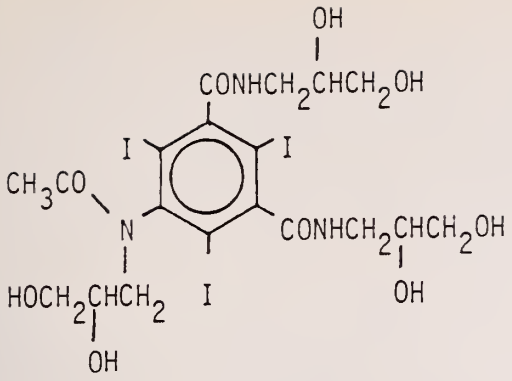


Figure 1

Extensive animal experiments have shown that iohexol has lower chemotoxicity and osmotoxicity than the ionic ratio 1.5 media.[2] Acute intravenous toxicity in mice is less than half that of the ionic ratio 1.5 contrast media. Comparison with ioxaglate shows that the LD 50 of iohexol is about 80% higher. This difference in intravenous toxicity must be due to the lower molecular toxicity of iohexol, since ioxaglate has the lower osmolality. In histamine release experiments, iohexol releases less histamine than either metrizamide or ioxaglate. The hypertonicity of contrast media induces a loss of intracellular water from red cells, reducing their ability to pass through capillaries. Iohexol has less influence on red blood cell morphology than metrizamide, ioxaglate, or the older contrast media.

Following intravenous bolus injection or intracardiac injection, iohexol produces smaller pressure increases in the pulmonary artery and smaller pressure decreases in the aorta than the ratio 1.5 media. These advantages are especially important in patients with pulmonary hypertension, emphysema, pulmonary fibrosis, and cardiac disease. Due to the its lower molecular toxicity, iohexol has less tendency to produce pulmonary edema than either the ratio 1.5 media or the ratio 3 ioxaglate or iopamidol.This may be important in patients with cardiopulmonary disease. Endothelial damage is related more to molecular toxicity than to osmolality. All ratio 3 media (iohexol, metrizamide, and ioxaglate) produce less endothelial damage than the older ratio 1.5 media. At the same dose, the ratio 3 media produce considerably less vasodilation than the older media. This means that the newer media are less likely to cause hypotension following intravascular injection, an important factor in elderly patients who are at risk of cerebral and myocardial infarction or renal failure. In coronary arteriography, the nonionic media produce less decrease in left ventricular contractile force than the older media. When injected into the renal artery, iohexol produces less albuminuria and less diuretic effect than the ratio 1.5 media. Following injection into the subarachnoid space, there is less penetration of the blood-brain barrier by iohexol than by metrizamide, and iohexol has less effect on animal behavior than iopamidol or metrizamide. The risk of arachnoiditis in experimental animals is less with iohexol than with metrizamide.

In clinical trials with large numbers of patients, myelography with iohexol resulted in satisfactory images and significant reduction in the incidence of headache, nausea, vomiting, and psychobehavioral changes as compared to patients receiving metrizamide.[4, 5, 6] In one large series, the incidence and severity of adverse side effects were slightly but significantly less with iohexol than with iopamidol. Three of 25 patients showed EEG changes following myelography with iopamidol; none of 35 patients examined with iohexol demonstrated EEG changes.[7] In a large clinical trial of over 1,000 patients, no epileptogenic activity was recorded in over 370 patients receiving iohexol intrathecally. No mental or psychoorganic changes were observed in any patient. Seventy percent of patients given iohexol had no adverse reactions, as compared to 47% who were symptom free with metrizamide.[8]

Iohexol is distributed in the United States by Winthrop-Breon under the trade name Omnipaque and is available in sterile solution. For intrathecal use, it is supplied in 180 and 240 mg I/ml concentrations. It is readily absorbed from the CSF into the bloodstream and is eliminated by renal excretion. In conventional radiography, good diagnostic contrast is present for at least 30 minutes. For computerized tomography, initial opacity is too great and the examination should be delayed 1 to 2 hours. Prolonged plasma iohexol levels occur in patients with renal impairment. Currently, Omnipaque 180 and 240 are approved only for lumbar and thoracic myelography and computerized tomography in the adult.

Contraindications are known hypersensitivity to the drug and local or systemic infection.

(Please turn to page 534)

(Continued from page 533)

Concurrent intrathecal administration of corticosteroids is contraindicated and a total dose of 3,060 mg iodine should not be exceeded.

Certain drugs that lower seizure threshold should be discontinued 48 hours before myelography and not be resumed for at least 24 hours postprocedure. These include phenothiazine derivatives, MAO inhibitors, tricyclic antidepressants, CNS stimulants, analeptics, major tranquilizers, and antipsychotic drugs. In an emergency situation, prophylactic use of anticonvulsants should be considered.

Possible adverse reactions include aseptic or bacterial meningitis, allergy or idiosyncrasy, CNS irritation, mental disturbances, peripheral neuropathy, back pain, and paresis. Patients with a history of allergy are twice as likely to have a reaction. Patients with a history of previous reaction to a contrast medium are 3 times more susceptible than the average patient. Overdosage has not been reported but would be expected to result in neurological deficits and EEG changes.

Omnipaque 180 and 240 are slightly hypertonic to CSF. The concentration and amount used are determined by the size of the patient and the extent of spinal canal to be examined. Under no circumstances should more than 3,060 mg iodine be administered intrathecally. This is a maximum of 17 ml for the 180 mg I/ml concentration and 12.75 ml for the 240 mg I/ml concentration. Patients should be well hydrated before and after the myelogram. If vomiting occurs, phenothiazine antinauseants should be avoided. Dehydration should be treated with intravenous fluids.

For intravascular use, Omnipaque is supplied in a 300 mg I/ml solution for aortography, cerebral arteriography, phlebography, and excretory urography; and in 350 mg I/ml concentration for angiocardiography, aortography, digital subtraction angiography, peripheral arteriography, and excretory urography. Although adverse reactions are less than with the older contrast agents, the same warnings and precautions apply. Patients should be well hydrated and equipment for treatment of reactions should be at hand. Extreme care is indicated in patients with impaired renal or liver function, thyrotoxicosis, or myeloma; in diabetics with elevated serum creatinine levels; and in patients known or suspected to have a pheochromocytoma. The recommended volumes to be injected are the same as with the older contrast media.

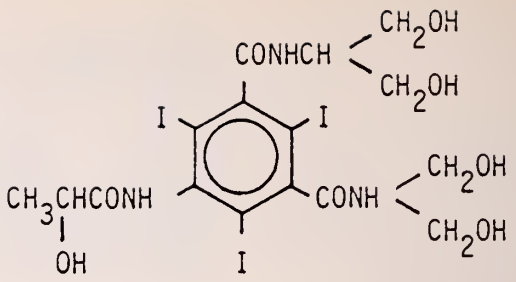


Figure 2

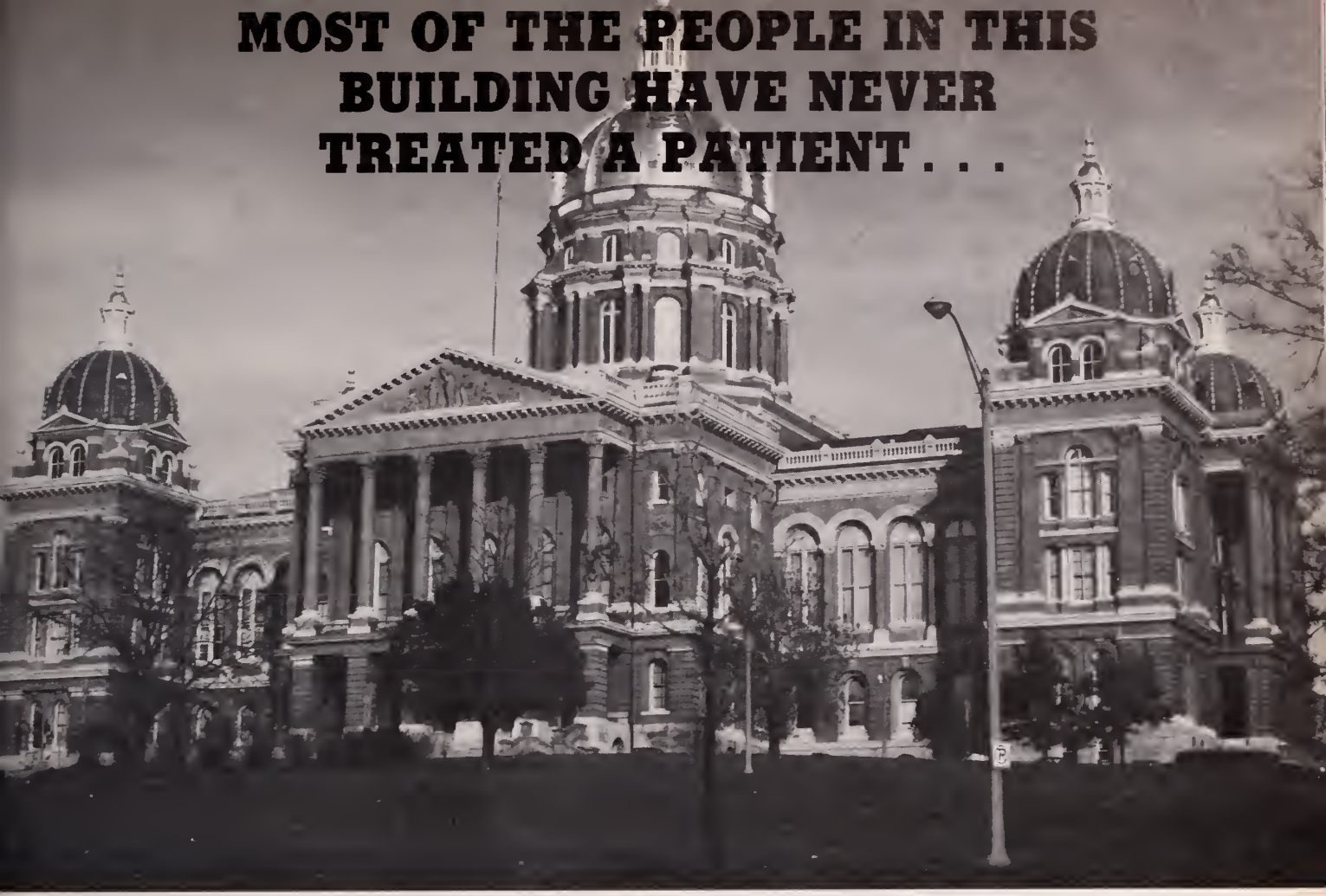
Iopamidol

Iopamidol is a nonionic, water-soluble radiographic contrast agent. Its chemical structure and properties are very similar to those of iohexol. It has an ionic ratio of 3 and the chemical structure is illustrated in Figure 2.

Iopamidol given intravenously to mice had higher LD 50 values than diatrizoate, iothalamate, ioxaglate, or metrizamide. Extensive animal experiments showed that iopamidol caused less toxic and pharmacodynamic effects than metrizamide or the older contrast media.[9] In 43 healthy human subjects, iopamidol was cleared rapidly from the bloodstream, excreted in the urine, and well tolerated. In Europe, intrathecal and intravascular injections of iopamidol in over 200,000 procedures produced fewer adverse reactions than metrizamide. Angiography was less painful and hemodynamic changes were less than with the ratio 1.5 contrast media.[10,11] In the United States, it was concluded after extensive testing that nonionic media are considerably less deleterious to the cardiovascular system than the older ionic media.[12] Because of the reduced osmolality, the nonionic media produce much less burning sensation during peripheral arteriography than the older ionic agents. In cerebral angiography, intracarotid or intravertebral injection produced less patient discomfort and less neurotoxicity than the ionic media.[13] Iopamidol is also superior to the older contrast substances in excretory urography, peripheral phlebography, and digital subtraction angiog-

(Please turn to page 536)

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raphy because of its lower toxicity, better patient tolerance, and superior radiopacity.[14, 15, 16]

For intrathecal administration, iopamidol is supplied by Squibb in 2 concentrations: Isovue-M 200, containing 200 mg I/ml and Isovue-M 300, containing 300 mg I/ml. It is approved only for adults in all types of myelography and for cisternography and ventriculography in conjunction with computerized tomography. Contraindications, drug interactions, and possible adverse reactions are the same as with iohexol. Patients should be well hydrated prior to and following the procedure, since dehydration may contribute to renal failure in susceptible patients. As with iohexol, the most common adverse reactions are headache, nausea, vomiting, and musculoskeletal pain. These are usually mild or moderate and resolve in 24 hours. Severe, immediate, or delayed chemotoxic or anaphylactic reactions are possible, particularly if large amounts of contrast enter the intracranial spaces. Isovue-M 200 is only slightly hypertonic and is recommended for lumbar myelography. For movement to more distant areas with resultant dilution by CSF, the more concentrated Isovue-M 300 is recommended. A total dose of 4,500 mg I should not be exceeded (22.5 ml for Isovue-M 200 and 15 ml for Isovue-M 300). However, recommended doses range from 10 to 15 ml for myelography and 4 to 6 ml for CT cisternography. Repeat examination should not be done for at least 48 hours, and preferably not for 5 to 7 days. Entry of large or concentrated amounts of contrast intracranially should be avoided by appropriate positioning.

For intravascular use, iopamidol is being marketed by Squibb as Isovue-300, which is identical to Isovue-M 300 and Isovue-370, which contains 370 mg I/Ml. Isovue is suitable for all types of angiography, as well as for intravenous injection for enhancement of computerized tomograms. Warnings, precautions, and contraindications are the same as for all intravascular media. Adverse reactions in angiocardiography of 597 patients included hot flashes in 3.4%, angina pectoris in 3.0%, flushing in 1.8%, bradycardia in 1.3%, hypotension in 1.0%, and hives in 1.0%. Feelings of burning

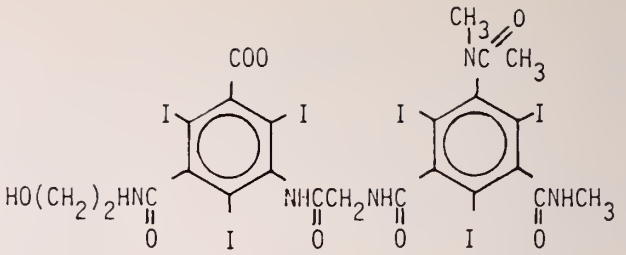


Figure 3

and pain in peripheral arteriography were much less frequent and severe than with diatrizoate injection. Foreign experience with over 2.4 million patients receiving iopamidol showed a decreased incidence of life-threatening reactions and death as compared to the ionic contrast media. Isovue-300 is recommended for aortography, selective visceral arteriography, coronary arteriography, and ventriculography. Volumes to be injected are the same as with the older media and should be kept as low as possible.

Ioxaglate

Ioxaglate is a low-osmolality ionic contrast agent with 6 iodine atoms bound to 2 benzene rings. In solution, ioxaglate dissociates into 2 molecules, each with 3 iodine atoms, resulting in an ionic ratio of 6:2, or 3:1. Thus, for a given concentration of iodine, there are half as many ions as in the ratio 1.5 contrast media. The osmolality is approximately twice that of plasma, but only one third that of the older ionic media. The chemical formula of ioxaglate is illustrated in Figure 3.

Ioxaglate is slightly lower in osmolality than iohexol or iopamidol, but cannot be injected intrathecally because it ionizes. Low-osmolality contrast media have shown reduced chemotoxic effects on red cells, less histamine release, fewer electrocardiographic changes, and less pronounced hemodynamic changes compared with the older media.[17] The reduction of adverse effects is particularly beneficial in children, patients with cardiac failure, those at risk from systemic hypotension, and other high-risk groups. No clinical disadvantage has been found with low-osmolality contrast media.[18] In cerebral angiography with ioxaglate, studies were of good quality and only 4% of patients experienced pain during carotid and

brachiocephalic injection.[19] Pain was also reduced in peripheral and visceral angiography.[20, 21]

Ioxaglate is supplied by Mallinckrodt under the name Hexabrix, which contains 320 mg I/ml and is suitable for all types of angiography in adults. Warnings, precautions, and possible adverse reactions are the same as with the older ionic media. The most frequent adverse reactions are nausea, vomiting, facial flush, and a feeling of body warmth. Hypersensitivity and cardiovascular or neurological reactions may occur. The recommended doses for the various types of angiography are the same as with the standard contrast media.

Conclusions

Extensive animal experiments and clinical tests in human subjects have shown that the low-osmolality contrast media with an ionic ratio of 3 are safer and better tolerated than the older ratio 1.5 media. Unfortunately, the new media are 10 to 20 times more costly. It is estimated that in the United States alone, approximately 5.2 million contrast studies are performed annually at a cost of about $7 per examination. This is an expenditure of over $36 million just for contrast media.[22] Switching to the new media would result in an outlay of $360 million to $720 million per year, a staggering amount of money. There is controversy in the literature about the increased benefits of the new media. One investigator believes that the risk of death with the new agents may be at least 3 times lower than with the older agents, and as much as 10 times lower in high-risk groups.[22] Another author states that the incidence of life-threatening reactions has not been shown conclusively to be less with the new media.[23]

The nonionic iohexol or iopamidol are clearly the contrast agents of choice for myelography, since they replace the more expensive metrizamide. For intravascular use, the low-osmolality agents should be reserved for high-risk patients. These include patients with hemoglobinopathies; ischemic heart disease with shock and heart failure; severe pulmonary hypertension; severe allergy, such as asthma; previous serious reaction to the older contrast media; and limb-threatening ischemia. — STEVEN H. CORNELL, M.D., *Professor of Radiology.*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

SUBSTANCE ABUSE IN IOWA — A STANDING REPORT

BY STATE LAW, the Iowa Department of Public Health Division of Substance Abuse (DSA) is charged with 1) affording substance abusers and chemically dependent persons an opportunity to receive quality treatment and rehabilitation services; 2) encouraging substance abuse education and prevention efforts and ensuring they are coordinated to provide high quality service without duplication; 3) ensuring substance abuse programs are being operated by qualified individuals.

Community Based Treatment Programs

To fulfill its treatment and rehabilitation mission, DSA funds 29 community-based treatment programs for screening, evaluation, intake/assessment, treatment and aftercare or followup. At least one program in each catchment or treatment service area provides outpatient services; residential and halfway house services are available through 15 program and 4 residential facilities serve juveniles. Another specialized service is a Native American treatment program. There are 51 juvenile beds, 160 residential beds and 137 beds in halfway houses.

All licensed programs under contract with DSA serve people in need of treatment, regardless of their financial condition. Those who can afford to pay are charged on a sliding-fee-scale basis — a contract provision. Linkage arrangements with other service providers help extend treatment services to groups such as the handicapped, the hearing impaired and those who do not speak English. To ensure continuity of care for clients with special needs, licensure standards require written policies and procedures to facilitate referrals between programs and other service providers. Use of existing community resources for support services is written into a client's aftercare plan. Through this service network, DSA-funded programs served approximately 25,000 individuals on an admission or pre-admission basis for fiscal year 1987.

In fiscal year 1986, chief referral sources for admitted clients included criminal justice agencies (31%), self referrals (13%), family and friends (7%), hospitals (13%) and social service agencies (8%). Ratio of males to females was approximately 4 to 1. Seventy-three percent of admissions were white males. More than two-thirds were between the ages of 18 to 25 and 31 to 49. For 67% of admissions, gross monthly income was $500 a month or less. Sixty-four percent lacked health insurance.

Prevention Services

DSA contracts with 25 prevention programs for delivery of comprehensive prevention services in all 99 counties. Comprehensive prevention services were provided to more than 178,000 individuals in fiscal year 1986. Comprehensive services offer information, education/skill building, early intervention, alternatives, social policy strategies and consultation. These services are provided in a variety of settings to a number of groups including youth in school (34.6%); youth out of school (5.3%); community (34.9%); parent (5.8%) and professional (19.4%). In addition, DSA funds innovative program activities.

(Please turn to page 540)

This information on public matters is furnished and sponsored by the Iowa State Department of Health.

STATE DEPARTMENT OF PUBLIC HEALTH

(Continued from page 539)

These include a longitudinal study of school children, minority youth projects, children of alcoholics projects and a prevention program for the elderly.

DSA also funds the Substance Abuse Information Center in Cedar Rapids. The center provides books, pamphlets, films and tapes on substance abuse issues to the general public and programs throughout Iowa.

A Summary of Substance Abuse and Treatment Trends in Iowa

The following observations are based on FY 1986 client data from DSA-funded treatment programs and information from other state agencies.

Alcohol continues to be the primary abused substance in Iowa. Marijuana is the second most-abused substance.

Based on reports from midwestern cities near Iowa, the amount of cocaine confiscations within the state and a gradual increase in persons admitted for cocaine addiction within the last 3 years, the number of individuals requiring treatment for this dependency-producing drug is expected to rise.

Increasing numbers of Iowans died last year from substance abuse and were killed in alcohol-related traffic accidents.

By nearly every measure, substance abuse continues a major problem for the criminal justice system. Most of the incarcerated, newly sentenced, and those on parole have problems with alcohol and or drug abuse. Forty-nine percent of clients treated in DSA-funded programs were involved in some phase of the criminal justice system.

Clients required to enter treatment programs because of their status in the criminal justice system are more likely to complete treatment and be discharged with no use of chemical substances than those who enter treatment voluntarily.

Although the percentage of youth admitted to Iowa's juvenile institutions with substance abuse problems is exceptionally high (53% are heavy users), there is evidence of declining use of chemical substances.

Iowa ranks among the upper 10 states in per capita consumption of 4 prescription drugs. However, according to a recent comprehensive study, Iowa does not have a serious diversion problem with these drugs.

More women and juveniles are seeking help for substance abuse problems, possibly because services at community-based treatment programs have expanded for both groups.

Over the last few years, characteristics of clients admitted to publicly-funded treatment programs have not changed significantly. Most are young (under 31 years old), poor, jobless and without health insurance.

Substance abuse treatment equips individuals with resources to deal with their health problem and tends to improve their employment, educational and legal status.

According to NIAAA, Iowa is maintaining its rank as the second-best state in dealing with alcohol-related problems — an indication treatment and prevention programs may be making a difference. — Janet K. Zwick and Louise Lex, Ph.D.

References

References in this article or further information are available upon request from the Iowa Department of Public Health, Division of Substance Abuse.

OUR MAN IN EDUCATION

(Continued from page 531)

metaphorical one from a contemporary British philosopher, Gilbert Ryle, writing about "Teaching and Training" (in Peters, R. [ed.], *The Concept of Education*, the Humanities Press, New York, 1967). To wax philosophical seems both a requirement and a privilege of card-carrying philosophers. (I wonder if *meta*physicians are eligible to join the AMA?) Professor Ryle also emitted the following statement, which I like, too, and I'll let you figure out how it relates to what I said earlier about the technological developments in CME: "People sometimes grumble at the ten commandments on the score that most of them are prohibitions, and not positive injunctions. They have not realized that the notice 'Keep Off The Grass' licenses us to walk anywhere else we choose; where the notice 'Keep To the Gravel' leaves us with almost no freedom of movement."

September 1986 Morbidity Report

Disease	Sept. 1986 Total	1986 to Date	1985 to Date	Most Sept. Cases Reported From These Counties
Aids	3	15	10	NA
Amebiasis	10	43	47	Scottered
Brucellasis	0	1	5	
Chickenpax	30	6664	5385	Scottered
Compylobocter	29	275	245	Scattered
Cytamegolavirus	1	16	9	Palk
Eatons Agent Infection	7	17	6	Scattered
Encephalitis, viral	7	16	24	Scattered
Erythema Infectiosum	0	262	0	
Gastraenteritis (GIV)	524	12223	10780	Scottered
Giardiasis	66	290	381	Scattered
Hepatitis, A	3	35	37	Palk, Scott
Hepatitis, B	7	72	67	Jahnson, Polk, Scott
Hepotitis, Nan A-B	3	23	14	Audubon, Polk, Worren
Hepotitis type unspecified	0	1	7	
Herpes Simplex	127	979	852	Scattered
Herpes Zoster	0	1	0	
Histaplasmosis	0	18	18	
Infectiaus monanucleasis	10	165	124	Scottered
Influenza, lob canfirmed	0	247	169	
Influenzo-like illness (URI)	881	72623	26556	Scattered
Legianellosis	5	12	7	Apponoose, Des Moines, Story, Woodbury
Malario	0	3	2	
Meningitis aseptic	8	37	38	Scottered
bacterial	5	66	97	Decotur, Dubuque, Marshall, Pottawattamie, Scatt
meningacoccol	0	11	8	
Mumps	3	27	13	Flayd, Keokuk,
Pertussis	5	18	6	Scattered
Rabies in onimals	17	149	128	Scattered
Reye Syndrame	0	0	4	
Rheumatic Fever	0	6	3	
Rubello (German meosles)	0	134	1	
Meosles	0	0	0	
Salmonellosis	38	206	218	Scottered
Shigellasis	6	14	16	Scattered
Taxic Shack Syndrame	0	8	6	
Tuberculasis tatol ill	5	40	46	Humboldt, Polk, Poweshiek, Scott
boct. pas.	5	37	43	Humboldt, Palk, Poweshiek, Scatt
Typhaid Fever	0	0	2	
Venereal diseases:				
Gonorrhea	310	2886	3300	Scattered
Chlamydia	258	1931	26	Scattered
Syphilis	0	6	17	

Other Nan-Repartable Diseases: Ureaplasma Urealyticum — 8, Jahnson, 2, Polk.

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Recent Highlights

U. OF I. COLLEGE OF MEDICINE

CYTOMEGALOVIRUS (CMV) INFECTION IS PREVALENT IN DAY-CARE CENTERS among as many as 71 percent of toddlers, UI pediatric researchers report. Results from a study by **James Bale Jr.,** Pediatrics and Neurology, and his colleagues, indicate that adults who care for children in day-care centers may be at risk to contract CMV infection passed to them by these children. CMV is potentially dangerous if transmitted to pregnant women who are not immune to the virus. The researchers suggest good hygiene as the key to reducing transmission of CMV, as well as other viruses.

*3 NEW UI COLLEGE OF MEDICINE DEPARTMENT HEADS: **Charles E. Driscoll** is the new head of Family Practice. Driscoll also was elected president of the Iowa Academy of Family Physicians in October. **Antonio R. Damasio** is heading the Neurology Department. He joined the faculty in 1976 and heads a research group that has scored several breakthroughs in new knowledge of Alzheimer's disease and other behavioral disabilities. **Thomas A. Weingeist** is the new head of the Ophthalmology Department. He is a UI College of Medicine graduate and joined the UI faculty in 1976. All three were named to their new posts from positions on the faculties of their respective departments, with Driscoll also having served as acting head of family practice since last July, Damasio as chief of the Behavioral Neurology Division since 1977 and Weingeist as director of the vitreoretinal service in ophthalmology since 1984.*

UI PEDIATRICIANS ARE AUTHORS OF A NEW 'ANSWER BOOK' ON PREVENTING THE SPREAD OF INFECTIONS. "Infections in Children, A Sourcebook for Educators and Child Care Providers," is published by Aspen Publishers, Inc. The authors, **Richard Andersen,** Internal Medicine, and **James Bale Jr., James Blackman** and **Jody Murph,** all of Pediatrics, cover such topics as the common cold, AIDS, ear infections, cytomegalovirus, meningitis, Reye syndrome, diarrheal infections and rashes.

*THE UI COLLEGE OF MEDICINE HAS BEEN AWARDED REACCREDITATION for another six years by the Accreditation Council for Continuing Medical Education. Under the leadership of **Richard Caplan,** Associate Dean of Continuing Medical Education, the UI program was commended for involving practitioners throughout the state in planning, producing and evaluating the variety of offerings sponsored by the College of Medicine.*

AT-A-GLANCE . . . An internationally-known specialist in parasitology, **Hsi Fan Hsui,** Preventive Medicine and Environmental Health, has been conferred the title of honorary professor of parasitology by the Peking Union Medical College, Beijing, the People's Republic of China. Hsui also has been elected an honorary member of the Shanghai Society of Parasitology, Shanghai, the People's Republic of China. . . . **Michael J. Brody,** Pharmacology, begins a two-year term as chairman of the Council for High Blood Pressure Research of the American Heart Association. Brody chaired the program committee for the 40th annual fall conference of the council held in October in Cleveland, Ohio.

*A UI HEARING RESEARCHER IS DESIGNING A GROUP OF TESTS to help compare different cochlear implants worldwide. **Richard Tyler,** Otolaryngology, spent six weeks at Cambridge and Oxford universities in England this summer designing the tests that may lead to a better design for cochlear implants. This evaluation of implant patients who speak foreign languages is similar to a five-year UI study that is testing the hearing of implant patients in the United States.*

This report has been compiled by The University of Iowa Health News Service.

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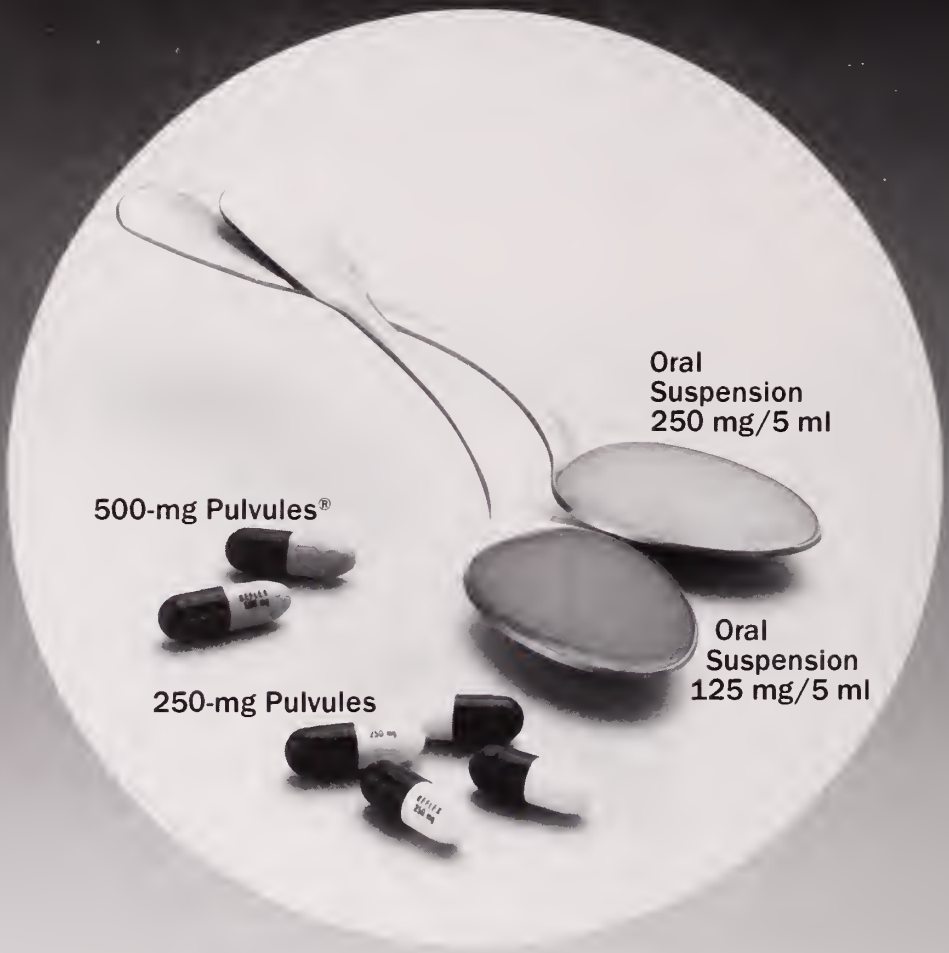
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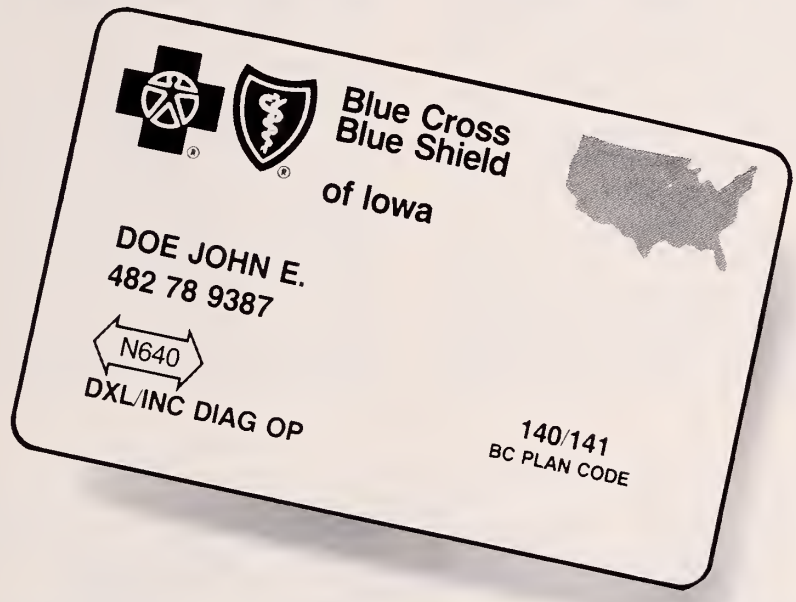
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News About Colleagues

ABOUT IOWA PHYSICIANS

NEW IOWA DOCTORS

Dr. Curtis A. Mock has joined **Dr. William Garred** in family practice in Onawa. Dr. Mock received the M.D. degree at Creighton University Medical School in Omaha and completed his family practice residency at North Colorado Medical Center in Greeley, Colorado.

Dr. Charles Vernon has joined the Broadway Medical Clinic in Anamosa. Dr. Vernon received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency at St. Luke's and Mercy Hospitals in Cedar Rapids. . . . **Dr. Frank H. Morriss, Jr.** has been appointed professor and head of the Department of Pediatrics at the U. of I. College of Medicine. Dr. Morriss received the M.D. degree; served an internship in pathology; pediatric residency; and a one year fellowship in neonatology at Duke University Medical School. Following a research fellowship in perinatal medicine at the University of Colorado Medical Center in Denver, Dr. Morriss joined the University of Texas Medical faculty where he is currently a professor of pe-

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diatrics and obstetrics, gynecology and reproductive sciences. . . . **Drs. Kurt Anderson, Ronald Renfrew** and **Douglas Elliott** have joined the staff at the Ottumwa Clinic. Dr. Anderson received the M.D. degree and completed his otolaryngology residency at Washington University in St. Louis, Missouri. Dr. Renfrew received the M.D. degree at U. of I. College of Medicine and completed his radiology residency at University of Iowa Hospitals. Dr. Elliott received the M.D. degree at the University of Illinois Medical School and completed his surgery residency at University of Iowa Hospitals and Clinics. . . . **Dr. Gerald F. Brown,** longtime Anamosa physician, retired in August. Dr. Brown received the M.D. degree at University of Chicago Medical School; interned and completed his obstetrics and gynecology residency at Chicago's Lying in Hospital and the University of Wisconsin. He began medical practice in Anamosa in 1950.

Dr. George N. Fotiadis has joined the Clarke Medical Clinic in Osceola. Dr. Fotiadis received the M.D. degree at the U. of I. College of Medicine and his family practice residency at Mercy Hospital in Iowa City. . . . **Dr. James R. Eelkema** has joined **Drs. Donald Flory** and **Asha Madia** at Medical Arts in Indianola. Dr. Eelkema received the M.D. degree at the University of Minnesota School of Medicine and served his family practice residency at Broadlawns Medical Center in Des Moines. . . . **Dr. R. F. Deranleau,** longtime Perry physician, retired in July. Dr. Deranleau received the M.D. degree at the University of Minnesota School of Medicine. He began medical practice in Perry in 1949. Assuming Dr. Deranleau's practice are **Drs. Stephen Sohn** and **Kurt Klice.** Dr. Sohn received the M.D. degree at the U. of I. College of Medicine. Dr. Klice received the M.D. degree at the University of Kansas School of Medicine. Both physicians completed their family practice residency at Broadlawns Medical Center in Des Moines. . . . Four new physicians have joined the Council Bluffs community. **Dr. Fred C. Marsh** has joined Midlands General Practice. He received the M.D. degree at the U. of I. College of Medi-

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cine; and served his family practice residency at Broadlawns Medical Center in Des Moines.

Dr. John F. Fieselmann, Des Moines, has been elected a fellow of the American College of Physicians. Dr. Fieselmann is chief of internal medicine at Veterans Administration Medical Center in Des Moines. . . . **Dr. Robert M. Stewart,** Sioux City, was elected to a 3-year term on the Blue Shield of Iowa board of directors. . . . **Dr. James A. Delperdang,** Des Moines, has been named director of the Iowa Methodist Medical Center Emergency/Trauma Center. Prior to his IMMC appointment, Dr. Delperdang was a staff physician in the Emergency Department at Mercy Hospital Medical Center. . . . **Dr. Milton E. Barrent,** Clinton, has retired from medical practice. Dr. Barrent received the M.D. degree at the U. of I. College of Medicine and served his surgery residency at University Hospitals in Iowa City. He began medical practice in Clinton in 1950. In 1979, the Iowa High School Athletic Association honored Dr. Barrent for his 29 years as team physician at Clinton High School. . . . **Dr. Thomas L. Bennett** has been appointed medical director of the Pathology Department at Charter Community Hospital in Des Moines. . . . **Dr. H.O. Stoutland,** Ackley, has closed his medical practice in Ackley and assumed a research position with the Dreyfus Medical Foundation in New York. At the Foundation, Dr. Stoutland will examine medical literature; pursue drug research and seek FDA approval for further uses of phenytoin (PHT).

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A Monthly Commentary

IN THE PUBLIC INTEREST

The BME: Sending A Message

"MANY CITIZENS and a surprising number of physicians aren't really sure what the Board of Medical Examiners does," comments William Vanderpool. "I've heard some Iowans believe the BME is a group of coroners."

As the new executive director of the BME, Vanderpool hopes to remedy this situation. Though he realizes things won't change overnight, he has some interesting ideas regarding the BME's responsibilities in communicating with Iowans and Iowa physicians.

Vanderpool, former Cerro Gordo County Attorney, hopes to lead the BME into a new era of openness and visibility.

"The BME is here to serve both citizens and physicians. We need regular communication channels with both those groups so they understand our role. In my opinion, public perception of what we do is almost as important as what we do."

Vanderpool believes public perception of the BME affects the image of physicians in general and the liability crisis in particular.

"There seems to be a reluctance on the public's part to report complaints to the BME. Instead, people take complaints into the court system," he states. "If the BME is seen as an active board, there is a potential for keeping some of these matters out of court."

Vanderpool stresses the importance of the message the BME send to the public.

We must, by the actions we take, send a strong message that we'll protect the public from those abusing the practice of medicine. We want every citizen to know we will try to help impaired physicians and take appropriate actions for others who are dishonest or incompetent. The board conveyed this message when I was hired because of my background as a prosecutor."

Increased openness and contact with the news media is one way Vanderpool plans to raise Iowans' awareness of the BME's role in health care delivery.

"It's imperative we let people know that physicians are policing their own ranks," he stresses.

Vanderpool is also cognizant of the BME's responsibility to communicate with the physicians it licenses.

"We must make physicians aware the BME is here to help them, whether it's risk management or making sure they know about state statutes governing the practice of medicine."

In other words, physician's perception of the BME is also very important to its effectiveness.

"Some physicians are afraid to report fellow physicians who are impaired or practicing medicine which is detrimental to the profession and patients. The vast majority of physicians have a great deal to gain in seeing that impaired physicians are helped and incompetent or dishonest physicians disciplined."

Though Vanderpool has only been with the BME since July 1, he's had sufficient contact with board members to be impressed by their commitment to the people they serve.

"The BME is very interested in doing all it can to assist physicians and protect the public good."

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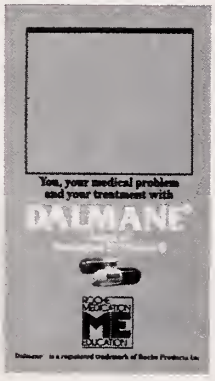
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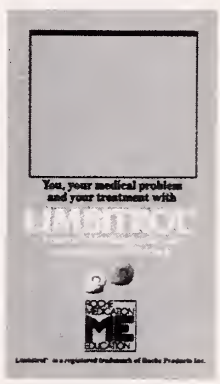
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IowaMedicine
December 1986 Journal of the Iowa Medical Society



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December 1986

IowaMedicine

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ABOUT THE COVER — The message on the cover reflects the wish of the IOWA MEDICINE staff. May you and your family find peace and happiness during the holiday season and the coming year.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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IOWA MEDICINE, Journal of the Iowa Medical Society (ISSN 0746-8709) is published monthly by the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265. Subscription Price: $15 per year. Printed by The Ovid Bell Press, Inc., Fulton, Missouri 65251. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. POSTMASTER: Send address changes to IOWA MEDICINE, Journal of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265.

NATIONAL ADVERTISING BUREAU: State Medical Journal Advertising Bureau, Inc., 711 South Blvd., Oak Park, Ill. 60302. Phone 312/383-8800

IOWA ADVERTISING: Contact Mrs. Polly Lynch, IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265. Phone 515/223-1401

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PRESIDENT'S PRIVILEGE



1986: A YEAR OF ACCOMPLISHMENTS

THE HOLIDAY SEASON is an appropriate time to look at the past year and examine our accomplishments. For the IMS and its members, this has been a year of change and achievement.

At the forefront of this year's accomplishments is the Society's fledgling tort reform campaign. Statewide physician involvement produced favorable results and a good foundation on which to build. During this time, the IMS has emerged as a recognized leader in the fight for liability reform.

As evidenced by the very successful 1986 Scientific Session and a well-attended fall seminar series, IMS physicians are becoming active in the area of risk management. The focus on risk management and its benefits for physicians and patients will become even more pronounced in the year ahead.

1986 was also a banner year for IPMIT, the Society's professional liability insurance company. IMS physicians can be proud of the company they created less than 2 years ago.

As reported in the August edition of IOWA MEDICINE, the IMS played a key role in a comprehensive study of Iowa's prescription drug diversion problem. The IMS will continue its involvement in projects which benefit our Iowa patients. IOWA MEDICINE will continue to explore issues of concern to the medical profession.

Throughout 1986, active and caring IMS members have participated in an extensive array of programs that makes the Society a vital, well-respected organization. This past year has demonstrated Iowa physicians have much to be proud of and much to be grateful for.

On behalf of the IMS officers, best wishes to you and your families during this holiday season.

L. D. Caraway, M.D.

L. Dean Caraway, M.D.
President

1986 Liability Reforms — A Synopsis

KEITH E. LUCHTEL, J.D.
Des Moines, Iowa

Phase one of the Iowa Medical Society tort reform campaign culminated last May when Governor Branstad signed Senate File 2265, the first step in solving Iowa's liability crisis. Here, Keith Luchtel, IMS legislative counsel, discusses legal ramifications of reforms contained in the bill. An accompanying article outlines further reforms the IMS will seek during the upcoming legislative session.

In 1985 the Iowa Medical Society began intense efforts for tort reform. The IMS Board of Trustees appointed a tort reform task force. Recommendations of the task force were adopted at a special House of Delegates session October 13, 1985.

Bills encompassing IMS proposals were introduced in both houses of the 1986 Legislature, along with other tort reform bills. The IMS was joined by many constituencies pressing for liability reform. Senate File 2265 is the result of this coalition effort. Governor Branstad signed the bill May 22, 1986.

Mr. Luchtel is an attorney with the Des Moines firm of Nyemaster, Goode, McLaughlin, Emery and O'Brien, P.C.

While Senate File 2265 is not a solution to the medical liability crisis, it represents a solid beginning. Continuing effort will be required to obtain passage of additional reforms that will be acceptable to legislators and improve Iowa's medical liability crisis.

S.F. 2265 makes 20 changes in insurance and tort liability law. Nine are of particular interest to physicians.

Peer Review

The IMS task force recommended statutory confidentiality provisions specifically for local peer review committees. Chapter 258A provides confidentiality for peer review conducted by a licensing board. The hospital licensing chapter of the code provides certain confidentiality and immunity for hospital-based peer review. Under Section 14 of S.F. 2265, confidentiality is provided for peer review committees other than examining boards. It is based on provisions in Chapter 258A related to examining boards, but there are significant differences.

Peer review records include all complaint files, investigation files, reports and other investigative information relating to licensee discipline or professional competence in the hands of the peer review committee. "Peer review committee," as the term is used in the bill, includes state and local professional societies, organizations conducting peer review at the designation of a professional society and the medical staff of a licensed hospital.

Peer review records are privileged, confidential and not subject to discovery or subpoena for use by any person other than an

affected licensee or peer review committee. They are not admissible in any judicial or administrative proceeding other than one involving licensee discipline or a proceeding brought by a licensee who is a subject of a peer review record and whose competence is at issue. This last proviso was included to enable peer review committees to defend themselves if a disciplined physician brings suit claiming the committee violated the physician's rights.

The bill also provides that a person is not liable for filing a report or complaint with a peer review committee or for disclosing privileged matter to a peer review committee. Persons at a peer review committee meeting are not permitted to testify concerning that meeting except in licensee disciplinary proceedings and proceedings brought by a licensee who was a subject of the meeting.

"Iowa law allowing punitive damages in civil litigation (where those damages are not insured) helps a plaintiff force a higher settlement. It is doubtful S.F. 2265 adequately addresses this concern."

Information available from other sources does not become unavailable or confidential just because it comes into the possession of a peer review committee. Information on licensee discipline may be disclosed to an appropriate licensing authority. Peer review committees must report to law enforcement authorities when information indicates a crime has been committed. The confidentiality granted shall not preclude discovery of the identification of witnesses or documents known to a peer review committee.

These provisions are important clarifications of existing law on confidentiality of peer review proceedings at levels other than the Board of Medical Examiners. While Chapter 258A allows the BME to authorize local peer review organizations, the Board has not yet pursued this course. Any 258A-sanctioned local peer review committee is entitled to the same confidentiality enjoyed by the BME.

Reporting of Disciplinary Actions By Hospitals

Section 14 of S.F. 2265 also requires that hospital disciplinary actions approved by a hospital board of trustees and resulting in a limitation, suspension or revocation of a physician's practice privileges due to a question of competency, or the voluntary relinquishment of hospital privileges due to competency, be reported by the hospital administrator or chief of medical staff to the BME within 10 days. Each report must be investigated by the BME. The reports are fully confidential and immunity is provided for those making the report or participating in the resulting proceedings.

To facilitate the reporting process, a definitional change was made. It adds hospital boards of trustees as defined peer review committees when performing this reporting function.

Exchange of Information by Boards

S.F. 2265 corrected a technical defect in Chapter 258A. Records and proceedings of licensed disciplinary actions are generally confidential. An exception allows an Iowa examining board to communicate with the examining board of another state concerning licensee discipline. Chapter 258A did not grant authority to an Iowa examining board to communicate licensee discipline information to another Iowa examining board. For example, the Iowa Board of Medical Examiners could communicate information concerning physician discipline to the Nebraska Board of Pharmacy Examiners, but could not communicate the same information to the Iowa Board of Pharmacy Examiners. Section 15 of S.F. 2265 allows Iowa examining boards to communicate with each other concerning licensee discipline.

Expert Witness Standards

IMS recommendations on expert witness standards were included in initial drafts of S.F. 2265. However, it was determined some of those recommendations could operate against physician defendants. Those proposals were dropped.

S.F. 2265 provides that when a physician's or dentist's standard of care is at issue, expert witnesses must have qualifications directly related to the medical or dental problems at issue and the type of treatment administered.

(Please turn to page 560)

Voluntary Agreements — Licensee Discipline

At the start of the 1986 session, the Board of Medical Examiners proposed legislation allowing them to restrict a physician's license based on a voluntary agreement with an examining board in another jurisdiction. This prevents a physician "settling" another state's action by entering into a voluntary agreement and preserving a "clean slate" in Iowa. Floor leaders agreed to an IMS request to include this BME proposal as Section 17 of S.F. 2265.

Non-meritorious Lawsuits

The IMS task force concluded non-meritorious lawsuits are a serious problem and account for much waste and inefficiency in the tort system. Early in 1986 the Iowa Supreme Court promulgated rules providing for sanctions against parties and attorneys involved in non-meritorious litigation. S.F. 2265 codifies those supreme court rules.

Under Section 36 of S.F. 2265, a plaintiff may be required to post a bond sufficient to pay all the costs of the defending parties to an action, including reasonable attorney fees. This requirement is conditioned upon the court finding that the plaintiff in the preceding 5-year period unsuccessfully brought 3 other suits deemed non-meritorious by the court.

Section 38 of the bill addresses the role of attorneys in non-meritorious litigation. It provides that a signature on a pleading, motion or other court document certifies the document is legally viable and offered in good faith. If it is found the document was not filed in good faith or was filed to harass or cause needless delay and expense, the opposing party or parties are to be compensated for the reasonable cost of responding to the improper pleading, motion or document.

Legislators were impressed by the fact the Iowa Supreme Court had taken action. The various bar organizations supported efforts to curtail non-meritorious litigation.

Disclosure of Expert Witnesses

Section 40 of S.F. 2265 adopts an expert witness disclosure rule in cases based upon professional liability. The witness's name, qualifications and purpose for testifying must be revealed to the defendant within 180 days of the defendant's filed response to the plaintiff's lawsuit. The defendant then has 90 days to certify an expert witness.

Punitive Damages

The IMS task force recommended elimination of punitive or exemplary damages. This was seen as a drastic step by many legislators and most members of the Bar. Section 42 of S.F. 2265 addresses punitive damages. Judges and juries are required to determine if the defendant's conduct constituted willful and wanton disregard for the rights or safety of another. They are also required to determine if the conduct complained of by the plaintiff was directed specifically at the plaintiff (or the person from whom the plaintiff's lawsuit is derived.)

A negative response to the first inquiry will result in no punitive damage award. A positive response may result in punitive damages distributed in a novel fashion if the answer to the second question is negative. If the wrongful conduct was not specifically directed at the plaintiff (or the person from whom the plaintiff's claim was derived), the plaintiff shall not receive more than 25% of the punitive damages award remaining after payment of costs and fees. The balance of the award goes to a civil reparations trust fund administered by the state court administrator.

This approach bears watching. Since there have been no known Iowa cases in which punitive damages have been awarded against a physician based on medical liability, the affect of these changes on the liability problem is doubtful. In a typical case the alleged wrongful conduct was directed specifically at a patient. This patient would be entitled to the entire amount of any punitive damages awarded, assuming the other predicates are satisfied.

Iowa law allowing punitive damages in civil litigation (where those damages are not insured) helps a plaintiff force a higher settlement. It is doubtful S.F. 2265 adequately addresses this concern. Another problem arises because an allegation that the plaintiff is entitled to punitive damages allows for discovery into the defendant's ability to pay. Since the purpose of punitive damages is to punish a defendant for particularly egregious conduct, courts have allowed the defendant's means to be discovered and admitted at trial so a court

(Please turn to page 564)

PROPOSED LEGISLATION — 1987

THE IOWA GENERAL ASSEMBLY'S Liability and Liability Insurance Commission has completed its deliberations and is in the process of formulating proposals for consideration during the 1987 legislative session. Charged with investigating the liability crisis and formulating recommendations, the commission has met 9 times during the summer and fall.

The Iowa Medical Society actively participated in the commission's deliberations, providing expert testimony and information on Iowa's malpractice liability crisis. William W. Eversmann, Jr., M.D., Cedar Rapids, served as the IMS representative on the commission. He was instrumental in assuring the views of Iowa physicians were reviewed and discussed by the commission.

The commission's final recommendations were to be approved on December 3, 1986. These recommendations will be made available to member physicians through IMS publications.

The following legislative proposals were presented to the commission by the Iowa Medical Society. The IMS will continue to advocate these proposals during the 1987 session of the Iowa General Assembly, which convenes January 11, 1987.

- Increased appropriations to the State Board of Medical Examiners (BME). Additional staff is needed to assure timely and effective disposition of complaints against physicians, including those relating to alleged malpractice.
- Legally require all medical liability insurers to report final disposition of all claims — not just those that go to court — to the Insurance Commissioner. The Commissioner would be required to forward pertinent information to the BME.
- Place a $200,000 cap on awards for noneconomic damages such as pain and suffering.
- Mandate structuring of awards for future damages in excess of $100,000, including a provision requiring reversion of funds not needed to fulfill the intent of the award.
- Prohibit punitive damages in medical malpractice cases.
- Limit attorney contingent fees to 35% of the first $100,000 of a settlement or award, 25% of the second $100,000 and 10% of any portion over $200,000.
- Shorten the additional time provided in the statute of limitations for minors. After age 6, a child would be subject to the same statute of limitations applicable to adults. Special treatment of mentally ill persons should be eliminated.
- Statutory elimination of the need to prove special damages and malice in order to successfully countersue a plaintiff or a plaintiff's attorney for prosecution of a frivolous case.

The IMS will be advocating other legislation which would provide for:

- Stricter drunk driving laws.
- Statutory requirements that motorcycle and moped operators wear protective headgear.
- Raise the minimum age for moped operators to 16.
- Prohibit sale of tobacco products in vending machines, raise the minimum age for purchase of tobacco products to 21 and prohibit smoking in public buildings except in designated smoking areas.

Other critical issues likely to be considered by the 1987 Iowa General Assembly include proposals to:

- Mandate hospital medical staff membership (including independent admitting and discharge privileges) for psychologists.
- Mandate third party payment for services provided by registered nurses.
- Provide authority for optometrists to administer and prescribe antiglaucoma drugs.
- Implementation of a fee schedule for Medicaid reimbursement of physicians.

Price Competition in Iowa's Health Care Market

PAUL M. PIETZSCH,
Des Moines, Iowa

How markets work and the results they achieve are not generally understood. This is especially true in health care. A blue ribbon, broad-based, HPCI Market Forces Task Force has prepared a report describing market forces and how they can be used to improve the performance of the health care industry. This article highlights the work of the Task Force.

DESPITE THE RASH of advertising, increased public relations efforts and a proliferation of storefront physician offices, Iowa's health care marketplace is not truly competitive. That's the conclusion drawn by the Market Forces Task Force of the Health Policy Corporation of Iowa (HPCI).

According to the report, the problem is not the quantity of competition, but the lack of one critical type of competition — price competition. Neither consumers nor providers in Iowa really have to face the best and most accurate test of whether or not a service is competitive — the test of the marketplace. The absence of competition is one of the major causes of the health care cost problems in Iowa and throughout the country.

To change that situation in Iowa, the HPCI Market Forces Task Force made 7 recommendations:

- Change insurance coverage so efficient and effective health care providers (physicians and hospitals) are rewarded with more patients.
- Give consumers, purchasers and providers of health care services more information with which to identify quality, efficient providers, and identify providers and practice patterns that are cost effective.
- Encourage the continued competition between health maintenance organizations (HMOs), preferred provider organizations (PPOs), and other alternative delivery systems (ADSs).
- Increase the share of health care insurance costs paid by employees to discourage immoderate or indiscriminate use of services.
- Offer multiple health plans so employees can select different levels of coverage and payment.
- Adopt fair and flexible legislation and regulations that, consistent with state and federal antitrust laws, allow purchasers and providers of health care services to negotiate price, method of payment and organization of health plans.
- Establish 3 task forces to study financing of graduate medical education and teaching hospitals in a competitive environment, address the problems of paying for indigent services and examine the issues of medical liability and tort reform.

Competitive markets encourage providers

(Please turn to page 563)

Mr. Pietzsch is president of Health Policy Corporation of Iowa.

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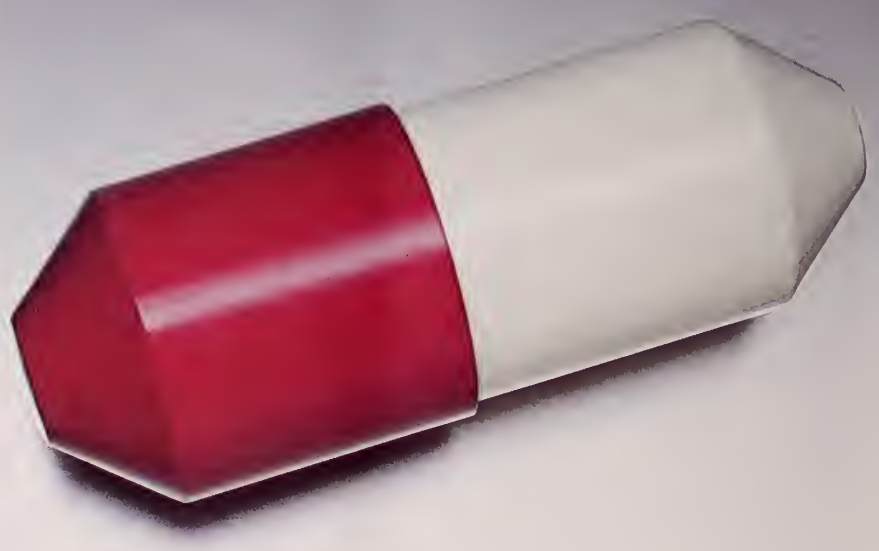
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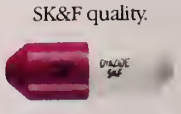
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to efficiently produce quality goods and services that are delivered conveniently and priced fairly. It is a mechanism to efficiently allocate scarce resources while meeting consumer preferences.

The market disciplines consumers and providers. Consumers who are not prudent purchasers will not get the most "bang for their buck." Inefficient producers will lose consumers or money; eventually they will adjust or go out of business.

The market forces keep consumers and providers alert. Health care consumers, the report says, "are looking for better value; providers are striving to stay efficient, adopt innovations and respond to consumer expectations."

In 1982, the Iowa Governor's Commission on Health Care Costs endorsed market incentives as the "most effective strategy for controlling costs." However, market incentives are not simply a cost containment effort, they're also an effective method of improving access while maintaining or improving quality of care.

The Health Policy Corporation of Iowa believes the market forces strategy is the best means for making quality health care accessible to Iowans at an affordable cost.

In its report, the Task Force says "the key ingredient in developing market forces is to give consumers and purchasers both the means and the incentives to identify and use efficient and effective health care providers. 'Good value' providers need to be rewarded with more business."

The Task Force also identified 8 issues that must be considered as the health care delivery system is changed and true marketplace competition introduced. They are: quality; affordability; convenience, accessibility and acceptance; innovation; financial incentives for consumers; financial incentives for providers; appropriate use and settings for services; and appropriate regulation.

The task force report describes how each of those areas would be affected in a competitive marketplace.

Innovation would not be stifled under a market-driven system as much as under a heavily-regulated system because providers would have incentives to evaluate and integrate innovations in response to what consumers want and need.

The current system provides no real financial incentives for consumers or providers to use or purchase health care services prudently. Under a competitive system, consumers and providers would have financial incentives that would bring about more efficient, and equally good — or better — care.

Consumers would "shop" for the best value among several health insurance plans. If they enroll in plans where they share costs, they would use costs as a basis for their health care selection.

One of the most important ways the competitive marketplace would affect the delivery of health care is to ensure "only needed services of high quality are provided and that they are delivered in the most cost effective, appropriate setting." Preventive medicine and health promotion efforts may receive more attention and emphasis in a competitive market.

"The Health Policy Corporation of Iowa believes the market forces strategy is the best means for making quality health care accessible to Iowans at an affordable cost."

Complex and sometimes conflicting regulations are now used to control costs (Certificate of Need laws and reimbursement formulas) and the quality (licensing and safety regulations) of the health care system.

Some regulations are designed to ensure access or require coverage for some types of care. But regulations that mandate benefits and levels of coverage interfere with the process of determining the "best value" for a benefit package.

In a market-oriented system, regulation would concentrate on ensuring adequate levels of quality are maintained and governmental activities are confined to helping the market work through such mechanisms as fair advertising and antitrust enforcement regulations.

The Task Force report outlines 2 approaches to strengthen market forces in Iowa. The first relies on competition between alternative delivery systems — HMOs and PPOs. The second relies on increased cost-sharing by consumers.

"These 2 strategies are not mutually exclusive nor are they incompatible. They are sim-

(Please turn to page 564)

PRICE COMPETITION IN IOWA'S HEALTH CARE MARKET

(Continued from page 563)

ply 2 different approaches for promoting market forces," according to the Task Force report. Costs are lowered in areas where either of the 2 approaches are used. Generally, costs are lowered in areas where HMOs are competitive.

The Task Force recommended all health care providers and insurance companies collect and release price, quality and other performance data using uniform definitions to ensure comparability.

So they can be better health care "shoppers," employees covered by employer-paid insurance plans should receive information about how to choose providers and how to get more price, quality and other health care information.

A report on health care costs trends and the status of market forces in Iowa should be prepared and updated annually. Iowa should continue its commitment to making price, use and quality data available through the Iowa Health Data Commission.

Another recommendation is phasing out the Iowa Certificate of Need program as the health care market becomes more competitive.

Finally, competitive and anti-competitive behavior and anti-trust issues should be clearly defined and monitored. Resolving these issues before they arise is preferable to litigation.

The task force was a broad-based group of representatives from business, medicine, labor, hospitals, the insurance industry, state government and the public.

Copies of the report are available through the Health Policy Corporation of Iowa, Suite 330, Two Ruan Center, Des Moines, Iowa 50309.

1986 LIABILITY REFORMS — A SYNOPSIS

(Continued from page 560)

or jury can decide on an award sufficient to "punish" the defendant. Generally, courts have prohibited discovery into the defendant's financial status until after the plaintiff demonstrates a prima facie case for punitive damages. The typical protective order was codified by the legislature and included within Section 42 of S.F. 2265.

Study Commission

S.F. 2265 also created a study commission. The commission is charged with investigating several aspects of the liability crisis including legislation to limit awards; insurance disclosure; regulation of insurance; and the power, authority and staffing of the Iowa Insurance Department. The commission has a specific mandate to study physicians' concerns.

Commission members are: Sen. Donald Doyle (D-Sioux City, co-chair); Rep. Dan Jay (D-Centerville, co-chair); Sen. William Palmer (D-Des Moines); Rep. John Groninga (D-Mason City); Sen. Julia Gentleman (R-Des Moines); Sen. Richard Drake (R-Muscatine); Rep. Kyle Hummel (R-Vinton); and Rep. Roger Halvorson (R-Monona). Lay members of the commission are Frank Alexander (UAW, Waterloo); Donald Byers (general counsel/secretary, Maytag); William Eversmann, Jr., (M.D., Cedar Rapids) and Thomas Vilsack (president, Iowa Trial Lawyers Association). The attorney general and commissioner of insurance are non-voting members.

The commission is to report to the Legislative Council by December 15, 1986.

Conclusion

From the outset it has been known the battle for significant tort reform would be protracted. The 1986 session was dominated by government reorganization and the state's economic problems. Democratic leadership indicated just prior to the session that there would not be time for the tort reform issue. Leadership promised a study of perceived problems would be conducted in the interim.

A lot of grassroots work was done by many groups during the 1986 session. Physicians can be satisfied their initial efforts brought more results than anticipated in the summer of 1985. More grassroots efforts should result in additional tort reform achievements in 1987.

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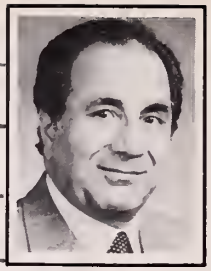
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Hormoz Rassekh, M.D.,

QUESTIONS AND ANSWERS



Holiday Depression: Myth or Reality?

Does holiday depression exist or is it a myth perpetuated by the media? Hormoz Rassekh, M.D., Council Bluffs psychiatrist and past IMS president, comments on this popular belief. Dr. Rassekh suggests true depression is not seasonal.

Is there such a thing as "holiday depression"?

It depends on how depression is defined. Lay people often confuse sadness and depression; but, according to the scientific definition, feelings of sadness do not constitute a true clinical depression. In my opinion, depressive illness has no correlation with the holiday season.

Who is subject to "holiday depression" or sadness?

If depression is defined as sadness, many people are subject to holiday depression. However, scientific literature suggests feelings of sadness as a reaction to an appropriate stimuli are a normal part of human life. For example, a widow may feel sad during the holidays because she remembers happier times with her family. There is no reason to become alarmed over these feelings unless they persist beyond the holidays.

In the last 15 years, we have discovered sound biological markers and biogenetic data regarding depression. Despite these refinements in our diagnostic criteria, it is difficult to determine where depression as a normal human emotion ceases and an affective disorder begins. Clinical manifestations appear similar except for duration and intensity of symptoms.

Is it true there is an increase in depression and suicide during the holiday season?

Although scientific data on the subject are somewhat scarce and inconclusive, current scientific literature refutes the common belief there is an association between the holiday season (particularly Christmas) and depressive illness. This belief has been reinforced by a psychoanalytical school of thought which has been highly popular and "trendy" in the recent past. However, the theory is becoming somewhat less popular and has doubtful validity.

For example, Duke University's 7-year study of seasonal variations in suicide and depression in "Archives of General Psychiatry" indicates no significant variations in suicide rates or hospital admissions during the holidays.

The association between depression and the holidays is reinforced by magazines and other media. The articles have attention-getting titles and usually contain case reports with or without professional comment. Examples include *"Christmas Depression and How to Deal With It"* in HARPER'S BAZAAR and *"Beat Those Holiday Blues"* in AMERICAN HOME. Readers seem to identify with these articles, indicating a need to address the issue.

Various publications have linked the symbolism of Christmas and the classical definition of depression as suppressed anger. For more information, I recommend *"Christmas and*

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CHICAGO!

Diagnosing Depression

JACK DODD, M.D.
Ames, Iowa

An estimated 1 in 10 Americans experience significant depression at some time in their lives. Yet, it is often difficult to distinguish patients suffering from serious depression. This article discusses the psychological and physical manifestations of depression.

DEPRESSION IS COMMON, but there is often doubt about diagnosing it. Depression is a syndrome — a collection of symptoms — representing several diseases. The syndrome has 3 characteristics: dysphoria, stress and impaired behavior.

Dysphoria — All depressed patients are unhappy but not all unhappy people are depressed. What distinguishes dysphoria from garden variety unhappiness? The moods are the same, but there are other distinctions. Dysphoria is more sustained. It usually lasts long enough to bring the patient to the doctor. Most unhappy people do not seek medical attention because unhappiness passes. Seeking medical attention for unhappiness is stigmatized and takes time and money. Most people bear a great deal before seeking aid. Two-thirds of those who meet criteria for clinical depression never seek medical help.

The second distinction separating depressive dysphoria from unhappiness is intensity. The dysphoria of depression is intense enough to induce helplessness or hopelessness. Pessimism is the hallmark of depression. The patient is unhappy and feels unable to cope. He/she either feels the miserable state can be alleviated or feels nothing will help. The patient who feels helpless is usually self-referred. The patient who feels hopeless is usually brought to treatment.

Suicidal obsessions indicate depression. The hopeless patient considers or plans suicide. Suicidal obsessions are not the *sine qua non* of depression. Some deny suicidal feelings because of religious beliefs, family obligations or fear of hospitalization. Though suicide is disavowed by the patient, the physician should be aware of the possibility.

Guilt is a sign of depression. If a grieving widow expresses guilt one should suspect depression. Depressed patients are highly self-critical. One successful psychotherapeutic technique is to have patients see their unhappiness in more objective terms and bear it without self-castigation.

Should "appropriate" guilt be considered a part of depression? Determining that a patient feels guilty is not difficult. Determining whether the guilt is appropriate is a moral judgement unhelpful in restoring the patient. Appropriateness of guilt is a useful question in psychotherapy but not in diagnosis. If the

Dr. Dodd is a psychiatrist at McFarland Clinic in Ames.

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doctor focuses on appropriateness of guilt, he may miss the diagnosis.

Disproportion may exist between the dysphoria and the preceding events. The middle-aged man/woman who is blue because he/she stole something as an adolescent may be depressed. The clue is the disproportionality between the intensity of mood and explanation. It is helpful to have a history from the family. The physician needs another view of the circumstances to understand the total picture. Besides suggesting the diagnosis of clinical depression, disproportionality intimates an internal cause.

In summary, dysphoria is depression and worthy of treatment.

Stress — Depressed patients display a stress response, a reaction to threats, frustrating circumstances, loss, pain or illness. The central nervous system is a chief mediator of response to an external or internal stress. Many symptoms are manifestations of stress applied to the central nervous system. Anxiety, insomnia, appetite disturbances and sexual dysfunction are common depressive symptoms.

Anxiety is part of depression. It manifests in fear and hyperactivity of the autonomic nervous system. Anxiety can occur without depression but depression does not occur without anxiety. If anxiety is intense or prolonged, depression can result. Depression is often an end state. If the patient has depressive symptoms he/she should be regarded as depressed.

Early morning wakening is a classic symptom of depression. Most patients complain of nonrefreshing sleep. A minority of depressed patients will demonstrate hypersomnolence. EEG sleep studies have consistently demonstrated 2 defects in the sleep of depressed patients: loss of stage 4 (deep) sleep and decreased latency of REM (patients enter dreaming more quickly).

Appetite disturbances are common. Anorexia is a classic symptom of depression. The majority of patients with less severe forms of

(Please turn to page 570)

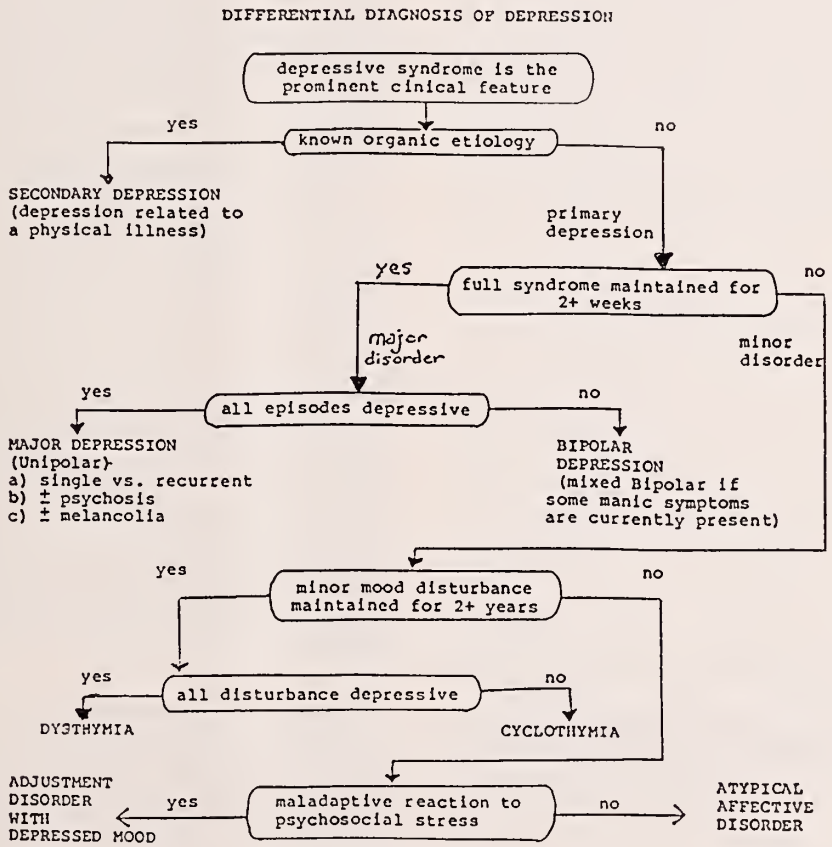


Figure 1.

depression complain of compensatory eating. Carbohydrates are usually increased in their diets. Sexual dysfunction, usually loss of interest in sex, is common.

Stress reactions which affect other physiological systems cause symptoms including headaches, dysphasia, dyspepsia, diarrhea, vague aches and pains. Some depressed patients complain about physical problems; others reveal them only upon careful questioning. Almost all have some element of bodily stress.

While all depressed patients have some evidence of stress, not all patients with stress acknowledge depression. In clinical populations, the majority of stressed patients present with functional complaints. Many deny they are depressed and insist their functional complaints are the problem. Though many appear depressed, they resist the label. Presentation with functional complaints as opposed to acknowledged depression is more likely in lower socioeconomic classes. These patients deny depression but respond to anti-depressant treatments.

"The dysphoria of depression is intense enough to induce helplessness or hopelessness. Pessimism is the hallmark of depression. The patient is unhappy and feels unable to cope."

The hypothalamic pituitary adrenal axis is a directing agent of the central nervous system. Adrenal corticoids are known markers of the generalized stress syndrome. This is the basis for one of the few biochemical tests of serious depression. The direct measurement of adrenal cortical levels and the adrenal cortical challenge test (the dexamethasone suppression test) are used to diagnose serious depression. Not all depressive patients show increased cortisol levels or a positive dexamethasone suppression test, but positive tests indicate a serious form of depression with high suicide potential.

Behavioral changes — Depression manifests itself in behavior. Depressed patients tend to be inefficient or nonfunctional. The term depression derives from the behavior of severely affected patients whose psychomotor activity is lowered. The term is a misnomer when applied to the internal state of depressed patients, which is highly active. (This has led to misguided use of stimulants with poor long term results.) Patients who are active complain of inefficiency, disorganization or procrastination. They focus on what they feel they should do but can't do.

In summary, dysphoria of depression is distinguished from normal unhappiness by its duration and intensity, pessimism, guilt, disproportionality and suicidal obsessions. Psychological tests are helpful to confirm the diagnosis. A commonly used test is the Minnesota Multiphasic Personality Inventory, (MMPI). This is an objective personality inventory with a long clinical history. It is useful to evaluate other types of psychopathology. The Beck Inventory is a similar but shorter depressive self-rating scale. The Zung Rating Scale helps the physician enumerate depressive symptoms and follow changes.

Specific clinical characteristics further categorize depression. The most important distinction is between depression secondary to a physical illness and primary depression. The term secondary depression indicates a condition resulting from something else. Psychiatrists also use the term when depressive symptoms are intermixed with other psychiatric symptoms such as schizophrenia. The depressive syndrome may be produced by physical diseases (hypothyroidism, Cushing's disease, carcinoma, dementia, chronic pain syndrome). Many medications can also induce a depressive syndrome (Reserpine, Inderal, alcohol).

The patient must be evaluated medically and psychologically. A history, physical examination and appropriate laboratory tests are an important part of the diagnosis of depression. The patient with the depressive syndrome related to physical illness requires proper treatment of that illness. If a depressed patient is on medication with a known depressive effect, it should be discontinued if possible. *Primary depression* is essentially a diagnosis of exclusion.

Once the diagnosis of primary depression has been established, it is helpful to characterize its clinical course and familial pattern. The first consideration is whether the depressive episode represents a *major depressive reaction* or a minor one. If it is a major depression

and there have been manic symptoms, it is a *bipolar depression*. If there is no previous history of mania, it is a *unipolar depression*. If the depression has some features of mania, it is a *mixed bipolar depression*. A major depression may have psychotic features such as delusions, hallucinations or confused thinking. This condition is *major depression with psychotic features*. A pronounced major depression with psychomotor slowing, weight loss and early morning wakening is a *major depression with melancholia*. The clinician should note whether this is the first or recurrent episode.

If the depression is a minor one and has existed for at least 2 years, the diagnosis would either be *dysthymia*, a neurotic type of depression, or *cyclothymia*, a marked and alternating moodiness. If the depression is minor and appears to be clearly related to psychosocial stress, the diagnosis is an *adjustment disorder with depressed mood*. The waste basket term for other types is *atypical depression*.

Depression can also be characterized by a familial pattern. It is well known depression runs in families. Depression is *family pure depression* if other family members have suffered from depression. If other family members have suffered from alcoholism or sociopathy, *depressive spectrum disease* is indicated.

While these descriptions are crude, they have prognostic and treatment values. 1) The prognosis for secondary depression is related to the underlying disease. 2) Major depression has a high suicide potential, is disruptive and usually requires hospital treatment. This is particularly true of melancholia. 3) Bipolar depression and mixed bipolar depression have a strong family history and respond to Lithium and neuroleptics. 4) Substance abuse is likely to occur with bipolar depression and depressive spectrum pattern disease. 5) Dysthymia and cyclothymia are chronic conditions which can be treated with medication and psychotherapy. 6) Family pure depression is the most likely to respond to tricyclic antidepressants. 7) Recurrent depression is likely to recur. 8) Adjustment disorders improve with support and time.

Depression is common. An estimated 1 in 10 Americans will experience significant depression at some time. Knowledge of the syndrome and the ability to make a firm diagnosis will give the practitioner a powerful tool to help numerous patients.

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Chronic Pelvic Pain: Evaluation and Treatment

SUSAN R. JOHNSON, M.D.
DOUGLAS W. LAUBE, M.D.
Iowa City, Iowa

Chronic pelvic pain is a common problem in the practices of primary care physicians. The diagnosis for evaluations of 117 women with this complaint were reviewed, and we conclude that the unselected use of radiographic and endoscopic procedures is not useful. A management approach emphasizing selective testing, psychological evaluation and long-term followup is discussed.

THE PROBLEM of evaluating chronic pelvic pain is faced by all physicians who provide primary care to women. Although the differential diagnosis is long, often no organic etiology is identified. A vigorous attempt to "rule out" disease in several organ systems is frequently undertaken, including procedures that are uncomfortable, expensive and involve radiation exposure. The value of laparoscopy has been established, but it is our clinical impression that the diagnostic usefulness of the routine performance of other tests is low.

The authors are associated with the Department of Obstetrics and Gynecology, University of Iowa College of Medicine, Iowa City, Iowa. Dr. Johnson is an assistant professor. Dr. Laube is an associate professor.

This retrospective study sought to determine if our experience supported this view. The findings are reported with an approach suggested for these patients.

Methods

The charts of 237 patients from 1971 to 1976 at University of Iowa Hospitals with a coded diagnosis of pelvic pain were reviewed. Chronic pain was defined as pain lasting longer than 6 months in a patient with a normal pelvic exam. The following patients were excluded: previously diagnosed cancer (14), acute pain (37), well-defined adnexal mass at initial pelvic exam (19), premenarcheal girls (1), no evaluation other than history and physical (9), and miscoded charts (42).

The remaining 115 charts were reviewed, and selected information was recorded including demographics, obstetrical and gynecologic history, medical and surgical history, physical exam, laboratory and radiographic studies, findings at operation and followup. Radiographic studies done at other institutions were accepted if formal reports or letters from a physician were available. Pelvic exam results were taken from the most senior physician examining the patient, in most cases the attending staff. Operative findings were obtained by reading the original operative report. Patients with hysterectomies in the past were included if they met the other criteria.

Results

History. Most patients were in the reproductive age group, with 73% of the patients between the ages of 19 and 34. Only one woman was postmenopausal. Eighty-two per-

cent were or had been married; 22% of this group were divorced. Only 14 were single, 9 of whom were under 21 years of age. There was little information recorded regarding marital difficulties or satisfaction; therefore, no data is available for evaluation of this factor. There were no characteristic menstrual cycle patterns or changes. All methods of contraception were represented. The expected rate of infertility (10%) was found.

The descriptions of pain tended to be vague. The location was described with almost equal frequency in the right lower quadrant, the left lower quadrant, and bilaterally. The majority of patients described dyspareunia (61%) while only one-third complained of dysmenorrhea. The duration of symptoms varied considerably, ranging from 6 months to 15 years. Eighty-two percent had symptoms of less than 3 years and 92% less than 5 years.

The general physical exam was in all cases unremarkable. Abdominal and pelvic exam were nonspecific with only mild tenderness being the usual finding.

Protocol Studies

Laboratory data included complete blood count, erythrocyte sedimentation rates, urinalysis, and gonorrhea cultures in the majority of patients. They were helpful in one patient who had an elevated erythrocyte sedimentation rate and was found at operation to have an appendiceal abscess.

Urological Exam

Thirty-six of the patients had urinary tract symptoms; 28 complained of burning and/or frequency. Bladder cystoscopy was performed in 64 patients. Twenty-one had a diagnosis of mild trigonitis with 37% of these symptomatic. Two patients had a diagnosis of severe trigonitis with one of these being symptomatic. In all these cases, it was the opinion of the examining urologist that the trigonitis was not the cause of the patient's pelvic pain.

Intravenous pyelography was done in 96 cases. There was no abnormality in 92. Incidental abnormalities were found in 3 (2 with reduplicated collecting systems and one with a small caliceal stone); again, none of these was felt to be a cause for pain. One patient had a major abnormality detected. She was a 33 year old gravid 1, para 1, with a 6 week history of right lower quadrant pain and no urologic symptoms. Intravenous pyelography showed a small filling defect in the right upper pole of the bladder, and a delayed cystogram revealed reflux. She eventually underwent a hysterectomy elsewhere for her pain and then returned to our institution where a bilateral ureteroneocystostomy was done because of progressive reflux. She did not complain of pain at the time of return, and since the urologic abnormality was still present, it was unlikely to be the cause of her pain.

Gastrointestinal Evaluation

Forty-eight patients had gastrointestinal symptoms, the most common being constipation (19) and nausea (15). One hundred women had a barium enema; 94 were normal. Four patients had exams suggesting a possible abnormality of motility or extrinsic compression suggesting the mass. All of these patients had normal findings at laparoscopy or laparotomy, and so they were considered to have had false positive exams. One patient who had a normal study was found operatively to have an appendiceal abscess, and this exam was considered to be a false negative. The only patient with a "true" positive study was a 43 year old woman with left lower quadrant pain, intermittent constipation and diarrhea, and a barium enema that revealed diverticular disease of the sigmoid colon. Sixty-four patients had sigmoidoscopy; none was abnormal.

Orthopedic Evaluation

Thirty-nine patients had lumbosacral spine radiographs (33%). Four had minor, incidental abnormalities that were not the source of their pain. Four had evidence of disease that could have caused their symptoms. Three of these were women over the age of 35 (36, 43, and 43) with a diagnosis of degenerative arthritis. The fourth was a 24 year old woman whose chief complaint was back pain. She had had symptoms for 3 years and experienced dyspareunia but not dysmenorrhea. Her x-rays were diagnostic of osteitis condensans ilii (sclerosis of the sacroiliac joint), and her symptoms resolved after a year and a half of intensive aspirin therapy. Table I summarizes the results of all these diagnostic studies.

TABLE I

SUMMARY OF YIELD OF DIAGNOSTIC STUDIES

	Cyst-oscopy	IVP	Sig-moid-oscopy	Barium Enema	Spine X-ray
Totol done	64	96	64	101	39
Findings					
Normol	41	92	64	94	32
Minor or incidentol findings	21	3	—	4	3
Mojor obnormolity	2	1	—	1	4
Mojor obnormolity exploining poin	0	0	0	1	4
Mojor obnormolity exploining poin in absence of specific symptoms	0	0	0	0	0

TABLE II

PSYCHIATRIC EVALUATION

	N
Personolity disorders	
Hysterio	12
Hysterio, some criterio	6
Possive oggressive	2
Inodequote	1
Obsessive	1
Affective disorders	
Depression	9
Psychoses	
Schizophrenio	1
Other	
Moritol discord	4
Substonce obuse	2
Adjustment reoction	3
Unspecified	1
TOTAL	42

Psychiatric Evaluation

Forty-nine patients were evaluated by a psychiatrist. Of these, 30 had a psychiatric diagnosis. An additional 12 patients had a previous history of suicide attempt, hospitalization for a psychiatric disorder, or a previous diagnosis of psychiatric disease, but were not reevaluated by a psychiatrist. Table II summarizes the diagnoses of these patients.

Operative Findings

Ninety-five patients came to surgery. Comparison of the clinical diagnosis with the findings are presented in Table III. Sixty patients had normal findings. The diagnosis of endometriosis was made correctly in 3 out of the 18 patients thought to have the disease and was not suspected but found in 3 others. Overall, the clinical diagnosis was correct in 49 of 95 cases (51%).

Discussion

Taylor made the first methodical attempt to describe the pathophysiology and clinical characteristics of chronic pelvic pain in 1949.[1-4] The group of patients he described were remarkably similar to those described in the current study and most other recent publications.

Women with chronic pelvic pain do not appear to differ from the general reproductive age population by fertility status or birth control method. They have frequently undergone several previous operations in search of an etiology for their pain and their family and marital history can often be described as "chaotic."

The natural history of chronic pelvic pain has not been well described. Onset is usually in the second or third decade and the pain can go on for many years. Our clinical experience suggests that some women may experience a remission after resolution of a life crisis or at the menopause.

There appears to be a clear difference between acute and chronic pain. After pain has persisted for more than 6 months, no matter what the etiology, pain perception is modified by both internal and external factors not under the conscious direction of the patient. At this point it may be more useful to recognize several components of pain: organic, psychological, and social. Each of these contribute to an individual's chronic pain problem.[5]

Organic Factors

Disease originating in all of the pelvic organ systems must be considered. Gynecologic disorders include endometriosis, chronic pelvic inflammatory disease, and adhesions. Pathologic evidence of endometriosis is common in women without symptoms and the classic history is secondary dysmenorrhea, not daily pain.[6] Exclusion of endometriosis can only be made by laparoscopic exam. There has been little study of the contribution of adhesions to

chronic pain. Most authors suggest that extensive adhesions, particularly those involving viscera, may contribute toward pain but that minimal adhesions are irrelevant. Patients with pain due to chronic changes of pelvic inflammatory disease will have corresponding findings on laparoscopy. Problems involving the gastrointestinal tract may contribute to a perception of pelvic pain. Irritable colon syndrome may be the most frequent offender. Other considerations include diverticular disease, inflammatory bowel disease, and in older women, malignancies. Urinary tract disorders are an uncommon source of chronic pain. Occasionally a woman whose primary complaint is low back pain will present with a pelvic component. Inguinal or femoral hernia should be considered in the woman with unilateral groin pain. This problem is difficult to diagnose in women but should be considered if the history is consistent.

Recently, Slocumb has suggested that many women with chronic pelvic pain suffer from a myofascial syndrome which he terms "abdominal pelvic pain syndrome."[7] He reports that these women have trigger points that reproduce the pain, and he has achieved a high success rate by injecting these trigger points with local anesthetic. The study was not controlled and requires replication.

Psychological Factors

Early studies suggested that psychological factors play an important causal role in chronic pelvic pain, and there was a high rate of psychiatric diagnosis in this study.[8, 9] Recently, however, Ranaer, *et al*, studied patients with, 1) chronic pelvic pain without organic cause, 2) pain due to endometriosis, and 3) no pain.[10] Psychometric test abnormalities were found in all 3 groups. This agrees with Hendler's findings in low back pain patients that chronic pain may lead to psychological abnormalities.[11] Whether they are cause or effect, recognition of psychological difficulties has important implications for therapy. Maruta and Swanson emphasize that patients should be managed as if they had both chronic pain and emotional difficulties without attempting to establish a priority of these 2 problems.[12]

Several major psychiatric disorders can involve chronic pain. Patients with affective disorder may complain of chronic pain but it is rarely the chief complaint. Similarly, schizophrenics may report pain as part of their delusional thinking but here the primary diagnosis is usually clear. Patients with somatasizing disorders often complain of pain, but it usually involves multiple organ systems. The majority of women with chronic pelvic pain do not fall into any of these categories, although secondary depression accompanying the chronic pain requires recognition and appropriate treatment.

TABLE III

COMPARISON OF CLINICAL DIAGNOSIS WITH OPERATIVE FINDINGS

		Operative Findings				
Clinical diagnasis	*Cases*	*Narmal*	*PID*	*Endametriasis*	*Adhesians*	*Other*
Pain	59	41	2	3	11	2*
PID	6	4	1	—	—	1**
Endametriasis	18	10	1	3	4	—
Adhesions	4	—	—	—	4	—
Other	8	5	—	—	3	—
Not operated	20					
	115	60	4	6	22	3

* PCOD (1) and chronic adnexal tarsian (1)

** Appendiceal abscess

Diagnosis

This is the first study reporting detailed results of preoperative diagnostic procedures in chronic pelvic pain. The results suggest that selection of diagnostic procedures based on the patient's symptoms would have resulted

(Please turn to page 576)

TABLE IV

LITERATURE SUMMARY OF OPERATIVE FINDINGS IN PATIENTS WITH CHRONIC PELVIC PAIN

Source	Number of potients	Operotive findings				
		nl	Endometriosis	PID	Adhesions	Other
Liston	134	102	6	—	21	5
Pent	38	18	7	(13, both)		—
Lundberg	95	37	13	15	17	13
Current study	95	60	6	4	22	3

in a correct diagnosis in those patients who did not have pelvic disease. In particular, the women with diverticular disease, degenerative disease of the spine, and osteitis condensans ilii could have been diagnosed without undergoing the complete battery of tests. The routine barium enema results illustrate the problem of false positive tests.

Because certain pelvic disorders cannot be detected by clinical examination alone, the value of laparoscopy is apparent and has been documented in several studies.[13-16] Table IV compares the results of laparoscopy or laparotomy in our group of patients with those in several other series. Endometriosis, pelvic adhesions, or evidence of old infection are found in approximately 15% of these patients, and these problems may contribute to chronic pain.

We believe that psychological evaluation of women with chronic pelvic pain is important. There are no psychometric tests specifically designed for this problem; the MMPI is commonly used.[17] A reasonable approach is to have the patient seen by a behaviorist (for example, social worker, clinical psychologist, or other mental health professional) to identify personality disorders or depression, and to try to es-



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tablish the meaning and function of the pain in the patient's life.

Treatment

Management of women with chronic pelvic pain can be time consuming and frustrating but there is evidence to suggest that improvement is possible. Resorting to surgical treatment is common, but there is little data to support its efficacy. The literature contains frequent references to the "reassurance effect" of normal laparoscopic findings but there are no good long-term followup studies to support this view. The patients in this study who had no findings on laparoscopy or who only had minimal adhesions, had a 50% remission rate with up to 6 months of followup. It is clear that hysterectomy performed in the absence of well-defined pelvic disease is *not* helpful.[18] Women may experience a remission of pain for a few weeks or month but the pain frequently returns.

Several studies suggest that short-term supportive counselling is helpful. Beard, *et al*, studied a small group of women with pelvic pain and found that short-term supportive therapy produced an improvement in 11 of 18 cases.[19] Pierce, *et al*, randomized 32 women with chronic pain with normal laparoscopic findings to 3 types of therapy groups and one control group.[20] There was a significant difference at a 12 month followup between all of the therapy groups and the control (no therapy) group. The most helpful therapy was nondirective counselling in which the patient was allowed to discuss anything she chose, and the pain itself was not a focus. These results are encouraging and suggest that interested primary care physicians may offer therapy.

Antidepressants and non-steroidal anti-inflammatory drugs have been suggested as treatments for chronic low back pain, but there are no clinical trials using these agents in patients with chronic pelvic pain. These should only be used when clinical indications are present.

In summary, the results of this study support our impression that the routine performance of multiple diagnostic tests in women with chronic pelvic pain is not cost effective. As in most other studies, a clear-cut organic etiology was identified in only a small number of patients. Those preoperative studies which were positive could have been predicted in most cases by clinical symptoms. An association with psychologic and psychiatric abnormalities was found, although a cause and effect relationship cannot be established by our data. Laparoscopy is the most useful diagnostic test.

The most important aspect of management is regular followup. Visits should be scheduled so that the number of pain related appointments can be reduced. Psycho-social factors should be addressed. A long-term goal of reducing medication, particularly narcotic medication should be pursued. As with any other chronic pain situation, new symptoms should be investigated since organic problems can develop.

References

The references noted in this paper are available either from the authors or the editors of IOWA MEDICINE.

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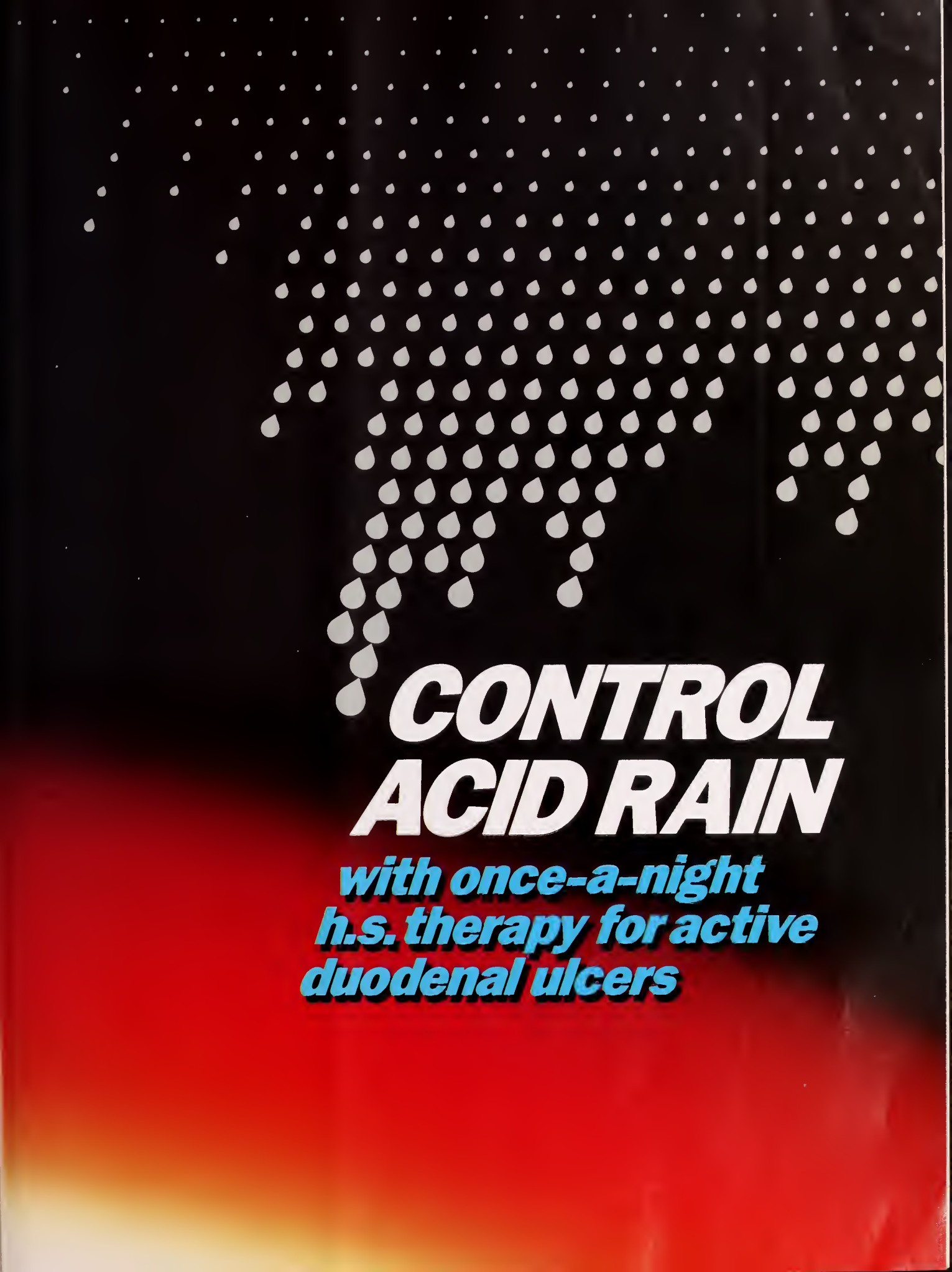
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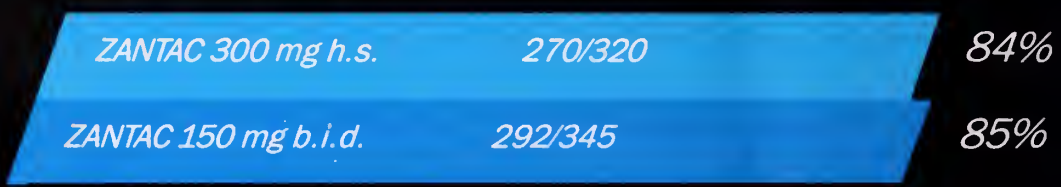
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Relieves pain and other symptoms as effectively as ZANTAC 150 mg b.i.d.[1]

Zantac® 300

ranitidine HCl/Glaxo 300 mg tablets

Once-daily dosing may enhance compliance in patients for whom dosing convenience is important

Side-effects profile comparable to ZANTAC 150 mg b.i.d.[1-3]

Headache—sometimes severe—has been reported. Rare effects on the CNS, cardiovascular, GI, hepatic, and integumental systems have been observed, as well as rare cases of hypersensitivity reactions. See ADVERSE REACTIONS section of Brief Summary of Product Information before prescribing.

No significant interference with the hepatic cytochrome P-450 enzyme system at recommended doses

ZANTAC 300 mg h.s. had no significant drug interactions with theophylline or warfarin. The bioavailability of certain medications whose absorption is dependent on a low gastric pH may be altered when ZANTAC or other medications which decrease gastric acidity are administered.



*It is not known exactly how much acid inhibition is needed to heal ulcers.

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See next page for references and Brief Summary of Product Information.

IN ACTIVE DUODENAL ULCERS

Once-a-night h.s. therapy controls acid rain

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References: 1. Data available on request, Glaxo Inc. **2.** Ireland A, Colin-Jones DG, Gear P, et al. Ranitidine 150 mg twice daily vs 300 mg nightly in treatment of duodenal ulcers. *Lancet* 1984;2:274-275. **3.** Colin-Jones DG, Ireland A, Gear P, et al. Reducing overnight secretion of acid to heal duodenal ulcers. *Am J Med* 1984; 77 (suppl 5B):116-122

ZANTAC® 150 Tablets
(ranitidine hydrochloride)
ZANTAC® 300 Tablets
(ranitidine hydrochloride)

BRIEF SUMMARY OF PRODUCT INFORMATION

See complete product information before prescribing. The following is a brief summary

INDICATIONS AND USAGE: ZANTAC® is indicated in:
1. Short-term treatment of **active duodenal ulcer**. Most patients heal within four weeks.
2. **Maintenance therapy** for duodenal ulcer patients at reduced dosage after healing of acute ulcers.
3. The treatment of **pathological hypersecretory conditions** (eg, Zollinger-Ellison syndrome and systemic mastocytosis).
4. Short-term treatment of **active, benign gastric ulcer**. Most patients heal within six weeks and the usefulness of further treatment has not been demonstrated.
5. Treatment of **gastroesophageal reflux disease (GERD)**. Symptomatic relief commonly occurs within one or two weeks after starting therapy. Therapy for longer than six weeks has not been studied.

In active duodenal ulcer; active, benign gastric ulcer; hypersecretory states; and GERD, concomitant antacids should be given as needed for relief of pain.

CONTRAINDICATIONS: ZANTAC® is contraindicated for patients known to have hypersensitivity to the drug.

PRECAUTIONS: General: 1. Symptomatic response to ZANTAC® therapy does not preclude the presence of gastric malignancy. 2. Since ZANTAC is excreted primarily by the kidney, dosage should be adjusted in patients with impaired renal function. Caution should be observed in patients with hepatic dysfunction since ZANTAC is metabolized in the liver.

Laboratory Tests: False-positive tests for urine protein with Multistix® may occur during ZANTAC therapy, and therefore testing with sulfosalicylic acid is recommended.

Drug Interactions: Although ZANTAC has been reported to bind weakly to cytochrome P-450 in vitro, recommended doses of the drug do not inhibit the action of the cytochrome P-450-linked oxygenase enzymes in the liver. However, there have been isolated reports of drug interactions which suggest that ZANTAC may affect the bioavailability of certain drugs by some mechanism as yet unidentified (eg, a pH dependent effect on absorption or a change in volume of distribution).

Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no indication of tumorigenic or carcinogenic effects in lifespan studies in mice and rats at doses up to 2,000 mg/kg/day.

Ranitidine was not mutagenic in standard bacterial tests (*Salmonella, E coli*) for mutagenicity at concentrations up to the maximum recommended for these assays.

In a dominant lethal assay, a single oral dose of 1,000 mg/kg to male rats was without effect on the outcome of two matings per week for the next nine weeks.

Pregnancy: *Teratogenic Effects: Pregnancy Category B:* Reproduction studies have been performed in rats and rabbits at doses up to 160 times the human dose and have revealed no evidence of impaired fertility or harm to the fetus due to ZANTAC. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: ZANTAC is secreted in human milk. Caution should be exercised when ZANTAC is administered to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Use in Elderly Patients: Ulcer healing rates in elderly patients (65 to 82 years of age) were no different from those in younger age groups. The incidence rates for adverse events and laboratory abnormalities were also not different from those seen in other age groups.

ADVERSE REACTIONS: The following have been reported as events in clinical trials or in the routine management of patients treated with oral ZANTAC®. The relationship to ZANTAC therapy has been unclear in many cases. Headache, sometimes severe, seems to be related to ZANTAC administration.

Central Nervous System: Rarely, malaise, dizziness, somnolence, insomnia, and vertigo. Rare cases of reversible mental confusion, agitation, depression, and hallucinations have been reported, predominantly in severely ill elderly patients.

Cardiovascular: Rare reports of tachycardia, bradycardia, and premature ventricular beats.

Gastrointestinal: Constipation, diarrhea, nausea/vomiting, and abdominal discomfort/pain.

Hepatic: In normal volunteers, SGPT values were increased to at least twice the pretreatment levels in 6 of 12 subjects receiving 100 mg qid IV for seven days, and in 4 of 24 subjects receiving 50 mg qid IV for five days. With oral administration there have been occasional reports of reversible hepatitis, hepatocellular or hepatocanalicular or mixed, with or without jaundice.

Musculoskeletal: Rare reports of arthralgias.

Hematologic: Rare reports of reversible leukopenia, granulocytopenia, thrombocytopenia, and pancytopenia.

Endocrine: Controlled studies in animals and man have shown no stimulation of any pituitary hormone by ZANTAC and no antiandrogenic activity, and cimetidine-induced gynecomastia and impotence in hypersecretory patients have resolved when ZANTAC has been substituted. However, occasional cases of gynecomastia, impotence, and loss of libido have been reported in male patients receiving ZANTAC, but the incidence did not differ from that in the general population.

Integumental: Rash, including rare cases suggestive of mild erythema multiforme, and, rarely, alopecia.

Other: Rare cases of hypersensitivity reactions (eg, bronchospasm, fever, rash, eosinophilia) and small increases in serum creatinine.

DOSAGE AND ADMINISTRATION: Active Duodenal Ulcer: The current recommended adult oral dosage is 150 mg twice daily. An alternate dosage of 300 mg once daily at bedtime can be used for patients in whom dosing convenience is important. The advantages of one treatment regimen compared to the other in a particular patient population have yet to be demonstrated.

Maintenance Therapy: The current recommended adult oral dosage is 150 mg at bedtime.

Pathological Hypersecretory Conditions (such as Zollinger-Ellison Syndrome): The current recommended adult oral dosage is 150 mg twice a day. In some patients it may be necessary to administer ZANTAC® 150-mg doses more frequently. Dosesshould be adjusted to individual patient needs, and should continue as long as clinically indicated. Doses up to 6 g/day have been employed in patients with severe disease.

Benign Gastric Ulcer: The current recommended adult oral dosage is 150 mg twice a day.

GERD: The current recommended adult oral dosage is 150 mg twice a day.

See full prescribing information for dosage adjustment for patients with impaired renal function.

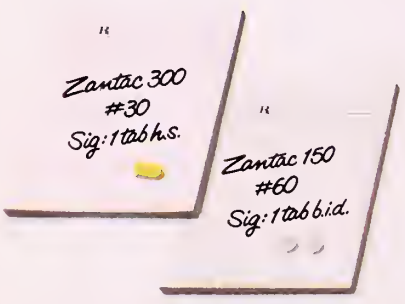
HOW SUPPLIED: ZANTAC® 300 Tablets (ranitidine hydrochloride equivalent to 300 mg of ranitidine) are yellow, capsule-shaped tablets embossed with "ZANTAC 300" on one side and "Glaxo" on the other. They are available in bottles of 30 (NDC 0173-0393-40) and unit dose packs of 100 tablets (NDC 0173-0393-47).

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Store between 15° and 30°C (59° and 86°F) in a dry place. Protect from light. Replace cap securely after each opening.

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Two effective regimens to treat active duodenal ulcers:



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Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



SEASON'S THOUGHTS

HAPPINESS IS the rightful goal of every individual. However, many fail to find happiness because of wasted energies seeking it. Money cannot buy it; it cannot be gained through inheritance. One must aim at something worthwhile, even the happiness of someone else. Another objective must often be the goal, and then happiness will follow. These thoughts are from John Stuart Mill (1806-1873), distinguished English economist, lawyer, philosopher and profound thinker.

James Oppenheim (1882-1932), an American poet expressed the seeking of happiness another way: "The foolish man seeks happiness in the distance; the wise man grows it under his feet."

The Holiday Season bodes happiness for most individuals. The laughter of children in anticipation of gifts, the holiday parties, and the joyous music of bells and carols lends well to the meaning of the season. Our heritage is renewed as we reflect on memories of days past, and hopes for the future. Yet, not all souls are happy for there are many in the throes of depression. Robert Burton (1577-1640), English philosopher, wrote in his *Anatomy of Melancholy*, "If there be a hell upon earth it is to be found in a melancholy man's heart."

We do not wish to dampen the holiday spirit by a consideration of depression in this issue of IOWA MEDICINE. However, it is often associated with the dreary months of winter, and the holiday season. Family ties may be strained, past unhappy events may be revisited, and feelings of inadequacy may prevail. Life is tedious and some cannot measure up to the stresses; depression ensues.

Our lead scientific presentation looks at the diagnosis of depression. Oftimes the recognition is obscured. Depression in children and adolescents can be very deceptive. We hope Doctor Dodd's presentation will provide new insight to this vexing diagnostic challenge. Treatment commenced early can be effective; yet it remains an ongoing cloud over the mental well-being of many. In most instances the patient must be helped to help himself. Voltaire (1694-1778) in a letter to a friend said "Wounds of the soul — [are] a disease wherein the patient must minister to himself."

Be that as it may, we of IOWA MEDICINE do wish all our friends and readers the best of the Holiday Season. May your days with your families and friends be filled with joy and happiness. Let there be peace throughout the world and good health for all. — M.E.A.

DARK-TINTED WINDOWS

I HAVE BEEN DRIVING a "loaner" automobile the past 2 weeks which has caused me a little concern about safety. The new automobile has deeply tinted windows, "factory installed." The tint is so dark it is impossible to view the inside of the automobile from the outside except through the windshield. From the inside, bright daylight is so shadowed it appears a summer thunderstorm is imminent. Early in the morning and at dusk, visibility through the side and rear windows is greatly obscured. In traffic, peripheral vision needed to view other automobiles on either side, es-

(Please turn to page 580)

COMMENTING EDITORIALLY

(Continued from page 579)

pecially a bit to the rear, is limited. This is a decided safety hazard.

Prior to driving an automobile with deeply tinted windows, I observed another safety hazard. Defensive driving often entails eye contact with other automobile drivers. For example, is the driver at an intersection stop sign looking both ways before entering your traffic lane? Often it is possible to predict the other driver's actions by seeing his facial expression. Yet, if his automobile windows are tinted this advantage is lost. Result: two automobiles at the same spot at the same time. This is count number 2 against tinted windows.

The third drawback, as I see it, is police officer safety. Imagine a police officer stopping an automobile driven by a suspected criminal. As the officer walks up to the auto, he should have an unobstructed view of the occupants. Deeply tinted windows prevent this. No view of the occupant is possible, least of all the gun pointed at the police officer.

Such deeply tinted windows are a safety hazard and a hazard to law enforcement. These status symbols should be outlawed. — M.E.A.

QUESTIONS AND ANSWERS

(Continued from page 566)

Depression" by Hal J. Breen, M.D. and *"Negative Reaction to Christmas"* by J. Eisenlud.

Generally, how do you differentiate between the patient who is "sad" during the holidays and one who is truly depressed?

Those who experience depression around Christmas are a heterogeneous group. I suggest the following diagnostic approach:

- Those with repeated episodes of clinical depression are probably suffering from a depressive illness and require individual professional care. In these cases, Christmas is only a precipitating factor. These patients need closer evaluation to secure more information for an accurate diagnosis.
- Those with a healthy adaptive life throughout the year who experience holiday depression should be considered as suffering from a transient adjustment disorder with depressed mood.

What triggers holiday depression or sadness?

The most common stresses perceived to cause holiday depression are:

- Remembering some past pleasurable experience (one which is no longer available).
- Dissolution of the nuclear family.
- Forced contact and interaction with family members with whom there is conflict or ambivalence.
- Increased demand for money.
- Change in lifestyle (drinking, late hours, etc.)
- Cultural phenomenon (insistence on a happy outlook with overt manifestations of joy.)

Is there any way to prevent this problem?

The usual sound advice is to avoid stresses and use moderation.

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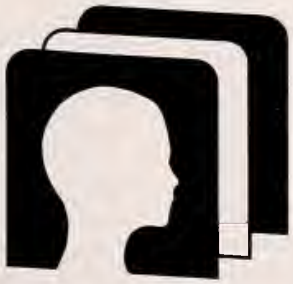
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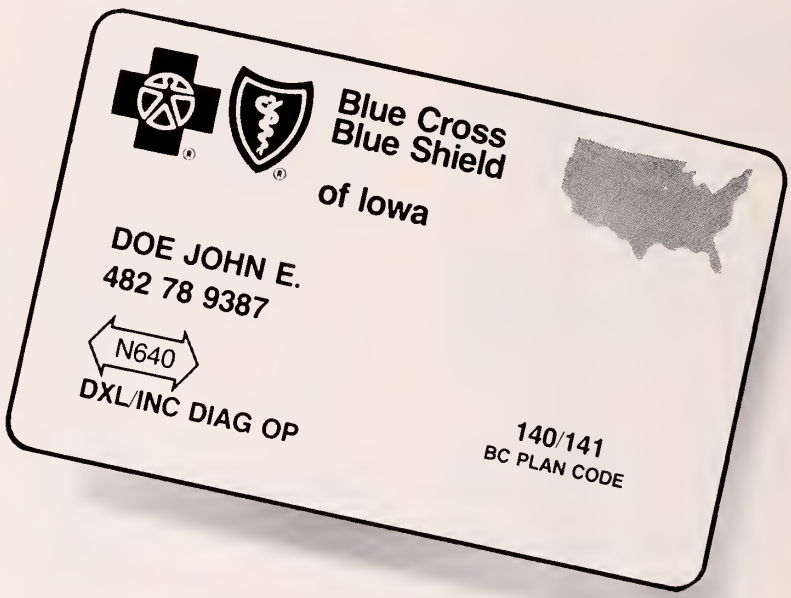
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



THE CONTACT LENS IN THE HOT TUB

THE WATER IN THE SWIMMING POOL felt good when I stepped into it — not too chilly. I was in the mood for a soothing experience just then, after completing a continuing education discussion session on a problem in medical ethics. A group of us had been grappling with one of those usual ethical "biggies" involving a choice of physician's behavior in a tough life-or-death situation. I rejoiced that the conference room at the hotel was only around the corner from the locker room and pool.

After a short swim I wandered to the hot tub, looking forward to a few minutes of thorough relaxation in the heat and bubbles. A young couple was already in the pool. I stepped into the hot water but realized at once that the air jets were not working. Knowing where the control timer was located, I stepped out and set the dial for 10 minutes of churning bubbles and then returned to the tub. I had barely lowered myself to my chin in the hot water when I sensed the couple seemed to be looking for something in the water. The man held his hand in front of the exit drain and the two continued to peer into the water and seemed to be reaching around to feel or squeeze the water. Just as it fully dawned on me they were hunting for something, and perhaps I should go turn off the bubbles or at least ask if they wanted me to do that, the man said to me, "Would you mind if we turned off the bubbles for a short while — my wife's lost a contact lens in here."

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

I agreed with full amiability and the man stepped to the timer, turned it off and returned to the tub to join his wife in a curious "sifting" or "straining" of the water with their hands. I wanted only to relax and especially to enjoy the bubbles, but felt that possibly I should offer to help, although the chance of finding the lens seemed to me a hopeless prospect. I didn't have any notion whether the lens might sink or float, and water was constantly draining out the exit aperture. I wondered what a proper response should be. What was the *right* thing to do? Under what circumstances should I rouse myself in order to try, or seem to try, to be helpful?

I grumped at myself for taking the trouble to ponder, even so slightly, this behavioral decision that depended on an ethical choice. I thought of the ethics discussion just before my swim, and how, within the subsequent 15 minutes I had an ethical decision to make — in a pool meant for relaxation, mind you. They seem trivial, but it reminded me that medical work is likewise full of value dimensions and choices that are largely and fortunately not the "biggies." They can be overlooked, and one can practice in a knee-jerk-reflex manner, or one can choose to be reflective about one's behavior and choices. The conscious identification of these choices seems to me to lead to a more satisfying medical practice, even though the choices may sometimes be very tough ones. I also believe that recognizing and thinking about those choices before taking action will work more fully in the patient's best interests. To put it another way, if an increased consciousness about medical ethics can affect one's thinking and behaving in the hot tub, just imagine what it might do for one's medical work.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

AMIODARONE

AMIODARONE HYDROCHLORIDE is a unique and controversial antiarrhythmic drug. It is unique because its pharmacokinetic profile is unlike that of any other antiarrhythmic agent presently in use. The controversy arises from its considerable toxicity, which until now has prevented its approval in this country. The effectiveness of amiodarone in the treatment of refractory ventricular arrhythmias resulted in its use in thousands of patients in the U.S. on a compassionate use basis. As a result, this drug has never undergone the time-consuming and rigorous trials usually required for governmental approval.

Amiodarone is a benzofuran derivative originally developed as a coronary vasodilator intended for the treatment of angina pectoris.[1] It enjoyed modest success for this purpose, but soon its electrophysiologic properties were recognized and subsequent development has been as an antiarrhythmic agent. The molecule contains 2 atoms of iodine, which make up 37.5% of its weight.

Electrophysiologic Effects

The predominant electrophysiologic effect of the drug is to prolong repolarization and refractoriness of all cardiac tissues.[1] This feature is responsible for its classification (Vaughan Williams) as a Type III antiarrhythmic, the same classification as bretyllium and sotalol. In some experimental models, and probably man, amiodarone suppresses automaticity in a number of cardiac tissues. Finally, amiodarone possesses alpha- and beta-adrenergic blocking properties.

Some of the electrophysiologic effects of amiodarone bear a striking resemblance to the effects of hypothyroidism on the heart. The effects of amiodarone on repolarization of the cardiac action potential can be prevented by the administration of triiodothyronine, suggesting that a major component of amiodarone effect is mediated by a selective inhibition of the effects of T3 on the myocardium. In patients treated with amiodarone, the electrocardiogram will routinely show sinus slowing, P-R and Q-T prolongation.

Hemodynamic Effects

The overall hemodynamic effect of amiodarone in patients with compromised ventricular function and ventricular arrhythmias is a composite of 3 influences. First, the drug possesses modest negative inotropic effects, which can be demonstrated most easily after acute IV administration, especially in patients with severely compromised LV function.[2] Second, the antisympathetic effects of the drug may be responsible for aggravation of heart failure in patients dependent upon sympathetic drive for maintenance of cardiac function. These 2 characteristics tend to be offset by the third influence that is the potent vasodilator property of amiodarone. Clinical experience and studies of LV function measured by radionuclide angiography suggest that in most patients little effect on overall ejection fraction is seen and

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

that amiodarone can be used with careful clinical follow-up in patients with compromised LV function.

Pharmacokinetics

Understanding the unusual pharmacokinetic properties of this drug is essential to its safe and effective use. After acute IV administration of 400 mg to healthy volunteers, total plasma clearance was approximately 8.5 liters/hour and steady-state volume of distribution was roughly 5,000 liters.[3] After single dosing the terminal elimination half-life was 25 days. Oral bioavailability varies from 20 to 60%. In patients treated with the drug chronically, the terminal elimination half-life was 50 to 60 days for both amiodarone and its metabolite, desethylamiodarone. Both may be measured in plasma as long as 9 months following its discontinuance. Amiodarone and its metabolite are found in very high concentration in fat, liver, lung, adrenal gland, testis, and lymph node.[4] High levels of amiodarone are found in areas of bluish skin discoloration that are seen after prolonged use of the drug. Renal elimination of the drug is negligible and clearance of amiodarone diminishes with time suggesting that it may impair its own clearance, as it does to a number of other antiarrhythmic drugs.

It must be apparent from the unusual pharmacokinetic profile that the time required to achieve steady-state drug concentrations will be very long unless a loading regimen is employed. Loading regimens presently in use will achieve plasma concentrations felt to be therapeutic (1.0-3.5 micrograms/milliliter) within approximately 15 days. A number of loading regimens have been proposed, but for serious ventricular arrhythmias reasonable loading and maintenance dosing might consist of 800 to 1,600 mg orally as a single daily dose (with a meal) for 1 to 3 weeks, followed by 600-800 mg daily for 1 month and chronic maintenance therapy of 400 mg a day. Depending on the clinical response and duration of therapy, further reductions in dosage may be possible with no loss of efficacy and a chance for significant reduction in side effects experienced during long-term therapy. The implications of amiodarone pharmacokinetics for clinical dosing are reviewed extensively by Zipes.[5]

Clinical Efficacy

Amiodarone is a very potent antiarrhythmic drug. Its use in this country has generally been reserved for patients with life-threatening ventricular arrhythmias, such as sustained ventricular tachycardia and fibrillation, who have failed to respond clinically to conventional drugs. In most cases several agents had been tried prior to the initiation of amiodarone. Despite its use in this highly selected and refractory group of patients, it has demonstrated a high degree of efficacy. Its ability to suppress ventricular ectopy is illustrated in a series of patients reported by Nademanee *et al.*[6] In 63 patients with frequent PVCs and runs of VT on ambulatory electrocardiographic monitoring, amiodarone completely abolished VT runs and reduced total PVC count by $> 90\%$ in 59 of 63 patients.

Morady *et al* reported the results of amiodarone administration in 154 patients treated for symptomatic sustained VT (118 pts.) or previous cardiac arrest (36 pts.).[7] All had failed to respond to conventional antiarrhythmic therapy (average 2.5 ± 1.2 drugs tested). Patients were treated with 800 mg daily for six weeks and 600 mg daily thereafter. Over an average follow-up of 14 months, 36 of 154 patients (23%) died suddenly or had a recurrence of VT; amiodarone was discontinued in 12 patients (8%) because of severe side effects; and 106 (69%) continued to be successfully treated on the drug. Other large series of clinically similar patients, such as those of Heger and Horowitz, confirm comparable response rates (64% and 62% respectively with mean follow-up over 1 year in each).[8, 9]

In recent years invasive cardiac electrophysiologic studies have been used to assess efficacy of therapy. The ability to prevent pacing induction of VT by an antiarrhythmic drug has proven predictive of a favorable clinical outcome while taking the drug chronically. It became apparent early that the majority of patients receiving amiodarone therapy still had persistence of pacing-induced VT.[6-9] However, this did not preclude a favorable outcome in most patients, and the utility of invasive studies has been questioned. Recent studies, such as that of Horowitz, suggest that these studies still provide clinically useful information regarding the adequacy of amiodarone to modify

(Please turn to page 586)

the hemodynamic response to VT, which may predict whether the drug may prevent *fatal* recurrences of VT.[9] Ambulatory electrocardiography is also useful to judge efficacy of therapy. Persistence of frequent ectopy and runs of VT on Holter monitor has been suggestive of a high likelihood of symptomatic VT recurrence on chronic therapy.[10]

Toxicity

Soon after the initial enthusiastic reports of the efficacy and safety of amiodarone, other reports emerged suggesting that the drug was associated with a myriad of side effects involving a number of organ systems. These side effects tend to occur with long-term administration in organs where the greatest deposition occurs, such as the liver, lung, and skin. Many of these side effects are dose related, and differences in reported frequency of side effects between the United States and Europe (where lower doses are employed) have been explained on this basis. Some side effects (such as liver enzyme abnormalities), but not others (such as thyroid dysfunction), appear to correlate with amiodarone blood level.[11] The role of drug-level testing is not established, but may be helpful if dose reduction is contemplated to ensure that levels needed for arrhythmia control are maintained.

Ocular

Corneal microdeposits that are visible on slip-lamp exam are present in virtually all patients treated with the drug.[12] These may be detected as early as 10 days after starting therapy and consist of a characteristic bilateral, symmetric linear streaking, running horizontally in the lower half of the cornea. This may progress to a vortex pattern or generalized granular "dusting" of the cornea. Mild symptoms such as halos, photophobia, and blurring may result in about 5% of patients, but visual impairment rarely occurs. Symptoms gradually respond to dose reduction and rarely require stopping the drug.

Dermatologic

Photosensitivity is the most common symptom reported in many series and can be expected to occur in 50% or more of the patients.[11] This may vary from increased ability to tan to extreme sunburn and discomfort in sun-exposed areas. Patients should be advised to use maximum topical sunscreen protection if sun exposure is anticipated. Evanescent skin rashes are occasionally seen early in therapy, but usually disappear despite continued therapy. A slate blue discoloration of the skin is seen after prolonged (years) therapy and is most prominent in sun-exposed areas. This disappears very slowly after dose alterations.

Gastrointestinal

Thirty percent or more of patients have GI side effects, primarily in the form of nausea, anorexia, and constipation. The nausea and anorexia are often a feature of the early high-dose loading phase, while alterations in bowel habits complicate long-term administration. Much of the nausea and anorexia can be avoided by taking the daily dose with food. Asymptomatic elevations in liver function tests (1.5-4 times normal) may be seen in 15% or more of patients.[11] Such changes correlate with dosage and blood level and are limited primarily to elevation in transaminase levels. Clinical hepatitis has been reported rarely and its relationship to amiodarone is not uniformly accepted in all cases.

Neurologic

As many as 35% of patients will report symptoms such as fine tremor, sleep disturbance, and headache.[7, 11] These symptoms may be mild and tolerable and are likely to respond to dose reduction, if necessary. Proximal muscle weakness may be encountered in some patients during the loading phase and is associated with doses of 800 mg per day or greater. A peripheral neuropathy has been reported to occur associated with segmental demyelination.[13] This is also reversible, but slowly, and may leave residual dysfunction.

Cardiac

Cardiac side effects are relatively uncommon and at times difficult to discriminate from new features of the patient's underlying cardiac disease. Exacerbation of heart failure is uncommon, even in patients with significant preexisting dysfunction. In the individual patient in whom it does occur, dose reduction and adjustment of diuretics may allow contin-

uation of amiodarone, although stopping the drug may be necessary. Disturbances of cardiac rhythm do occur, most commonly bradycardia due to sinus slowing or heart block (in patients with preexisting conduction system disease), and pacing may be necessary to permit continued therapy. Amiodarone may worsen ventricular arrhythmias or facilitate new ones (Torsades de Pointes) in about 5% of patients, a frequency that may be somewhat lower than other antiarrhythmic drugs.[5]

Thyroid

Amiodarone appears to block the peripheral conversion of T4 to T3, in a manner that favors the pathway to reverse T3. This results in elevations in T4 and reverse T3 with mild reductions in T3 in about half of patients without other clinical evidence of hyperthyroidism. The level of reverse T3 has been used to monitor both adequacy of amiodarone dosing as well as a means of screening for patients at risk for side effects.[14] These chemical abnormalities have made it difficult to follow patients for hyperthyroidism, but features of history and physical examinations as well as levels of free T3 in patients suspected of hyperthyroidism are still diagnostic. Hyperthyroidism complicates amiodarone therapy in about 1 to 5% of patients. Hypothyroidism is seen in 1 to 2% of patients and is indistinguishable from hypothyroidism seen in other settings. In these patients reverse T3 and T4 fail to rise during amiodarone and ultimately fall along with a rise in TSH. Appropriate therapy for thyroid dysfunction may permit continuation of amiodarone therapy.

Pulmonary

Of all the reported side effects of amiodarone, the pulmonary toxicity has been considered the most significant because it has caused a number of deaths. Its frequency of occurrence has been variably reported to be from 0 to 18%, and is infrequently reported from Europe where long-term maintenance doses are usually 200 to 400 mg per day. The vast majority of cases reported in the U.S. have been associated with maintenance doses above 400 mg per day.

The clinical findings consist of exertional dyspnea, nonproductive cough, weight loss, and occasionally a low-grade fever.[15] Laboratory findings suggestive of an inflammatory process such as mild elevation of WBC and sedimentation rate may be present. Hypoxemia and restrictive changes on pulmonary function testing are characteristic. Radiographically, bilateral diffuse interstitial changes and patchy alveolar infiltrates are seen and may be confused with pulmonary edema, pneumonia, or tuberculosis. Biopsy material shows foamy macrophages and hyperplasia of Type II pneumocytes while electron microscopy shows lysosomal inclusions similar to those induced by a number of other amphophilic compounds such as imipramine and chlorpromazine. It does not appear that routine pulmonary function testing is useful in predicting those at risk for the development of pulmonary toxicity, although patients with limited respiratory reserve may be identified and may deserve more intense follow-up.[16]

Drug Interactions

Warfarin

Prothrombin time may double and this effect may be seen as early as 3 to 4 days after starting amiodarone.[17] It is recommended that warfarin doses be decreased by one-third to one-half and monitored carefully, particularly in the first few weeks of therapy.

Digoxin

Amiodarone raises serum digoxin levels due to reduction in renal and nonrenal clearance of the drug.[18] Volume of distribution of digoxin is not affected. Effects on digoxin concentration may be seen within 1 day. Doses of digoxin should be reduced by one-half in order to avoid toxicity.

Antiarrhythmic drugs

The concomitant use of amiodarone with Type I drugs such as quinidine and procainamide will result in an increase in Type I level[17] and may enhance the likelihood that side effects or drug-induced arrhythmias will appear. A dose reduction of one-third to one-half is necessary to maintain desired levels of Type I drug. Amiodarone may have additive effects with other cardiac medications such as beta-adrenergic and calcium-blocking drugs on sinus and A-V nodal function and may result in symptomatic bradycardia. Individual dos-

(Please turn to page 588)

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DRUG THERAPY REVIEW

(Continued from page 587)

age adjustments may be necessary to prevent this complication.

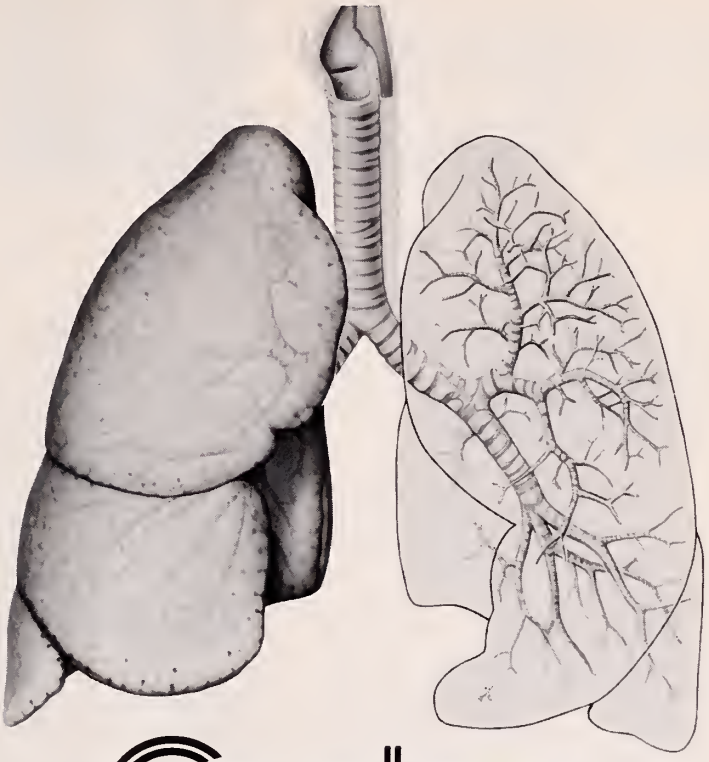
Summary

Amiodarone is a unique antiarrhythmic drug that is highly effective in preventing recurrent episodes of otherwise refractory sustained ventricular tachycardia and filbrillation. At present it is indicated only for these serious and life-threatening rhythm disorders and should be reserved for patients who have failed conventional agents. Because of its complex pharmacokinetics, narrow therapeutic/toxic ratio, and specialized requirements for testing and follow-up, it should only be used by physicians with the necessary experience and available facilities. — MICHAEL G. KIENZLE, M.D., *Assistant Professor of Internal Medicine, Staff, Clinical Cardiac Electrophysiology Laboratory.*

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- Discontinue Ceclor in the event of allergic reactions to it.
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- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- In renal impairment, safe dosage of Ceclor may be lower than that usually recommended. Ceclor should be administered with caution in such patients.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea): 2.5%.
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, erythema multiforme, serum-sickness-like reactions): 1.5%; usually subside within a few days after cessation of therapy. These reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%.

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

PLASMID-MEDIATED TETRACYCLINE-RESISTANT NEISSERIA GONORRHOEAE

THE CENTERS FOR DISEASE CONTROL (CDC) has confirmed 79 cases of plasmid-mediated tetracycline-resistant Neisseria gonorrhoeae infection (TRNG) from February 1985, when it was first identified, to March 14, 1986. Three of the 79 cases, all from Massachusetts, have been confirmed as combined tetracycline-resistant penicillinase-producing N. gonorrhoeae (TRNG-PPNG). Sixty-five (82%) of the confirmed TRNG cases were isolated from 3 states — Georgia (31 cases), Massachusetts (23) and Oregon (10).

The Georgia and Massachusetts cases were identified through a collaborative surveillance with CDC. Georgia's Fulton and DeKalb County Health Departments (metropolitan Atlanta) conducted active TRNG surveillance in the fall of 1985. Massachusetts has an ongoing statewide surveillance program for gonococcal resistance. The Oregon cases are from an outbreak among homosexual men in the Portland area.

On October 22, 1985, a 32-year-old homosexual male presented to the sexually transmitted disease (STD) clinic in Multnomah County, Oregon, with a 3-day history of urethral discharge and dysuria. A diagnosis of gonorrhea was made. Because the patient was allergic to penicillin, oral tetracycline was prescribed. One week later, the patient was still symptomatic and had a positive urethral culture for N. gonorrhoeae. Sensitivity testing by disk diffusion demonstrated a zone size to tetracycline of 13 mm (sensitive strains were defined as having disk diffusion zone sizes greater than 30 mm). The isolate was confirmed by CDC as high-level TRNG with a minimum inhibitory concentration of 32 ug/ml.

From October 22 to December 26, 1985, 9 other CDC-confirmed TRNG cases were identified at the Multnomah County STD clinic on the basis of disk-diffusion testing results. All patients were homosexual males infected at rectal (3 patients), urethral (2), rectal and urethral (4), and pharyngeal (1) sites. All 4 patients treated with tetracycline alone were treatment failures, and one has developed clinic orchitis since his initial clinic visit. All cases were of the same auxotype and serover class, suggesting the isolates were of a clonal origin.

Six additional cases of gonococcal disease, including 2 out-of-state cases, were diagnosed by contact-tracing. Two cases were tetracycline treatment failures; 2 were TRNG on the basis of disk-diffusion testing (zone size less than 20 mm); and 2 were not tested. Nineteen contacts, including 15 bathhouse contacts of one patient, could not be traced due to lack of identifying information.

In response to this outbreak, the Multnomah County Health Department instituted ceftriaxone as the drug of choice for all gonococcal infections among homosexual males. Educational efforts targeted at the professional and lay communities were intensified.

The geographic dispersion of TRNG strains since the original CDC Morbidity and Mortality Weekly Report (MMWR) in September 1985 is impressive. The rapid onset of the outbreak in Portland and the large number of untrace-

This information on public matters is furnished and sponsored by the Iowa Department of Public Health.

able contacts by several of the patients underscore the potential for rapid dissemination of new gonococcal strains into a community.

The identification of combined PPNG-TRNG strains in Massachusetts demonstrates anew the ability of N. gonorrhoeae to acquire multiple drug-resistant determinants. This includes such combinations as plasmid-mediated resistance (e.g., PPNG-TRNG), plasmid and chromosomally-mediated resistance (e.g., spectinomycin-resistant PPNG) or chromosomally-mediated resistance to multiple antibiotics.

The largest numbers of TRNG cases were identified from areas with active surveillance programs. With the exception of testing for B-lactamase, most areas in the United States do not routinely perform antimicrobial susceptibility testing on gonococcal isolates. Therefore, the incidence of resistant strains not presenting as treatment failures is unknown.

Tetracycline (doxycycline, minocycline) therapy alone is not recommended for the treatment of gonococcal infections. Because of the increasing geographic distribution and the complexity of antimicrobial resistance in N. gonorrhoeae and the increasing need for effective surveillance for new cases, CDC is preparing comprehensive guidelines for susceptibility testing.

The University Hygienic Laboratory in Iowa City is under contract to the Iowa Department of Public Health to automatically test for TRNG, PPNG and Chromosomal-Mediated Resistant Gonorrhea (CMRNG). To date, no cases of Tetracycline-resistant neisseria gonorrhoeae have been identified in Iowa.

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October 1986 Morbidity Report

Disease	Oct. 1986 Tatal	1986 ta Date	1985 ta Date	Mast Oct. Cases Reparted Fram These Caunties
Aids	3	18	11	NA
Amebiasis	5	48	49	Allamakee, Black Hawk, Dallas, Jahnsan
Brucellasis	0	1	5	
Chickenpax	129	6793	5578	Scattered
Campylabacter	47	322	247	Scattered
Cytamegalavirus	1	17	9	Janes
Eatans Agent Infectian	2	19	6	Linn, Winneshiek
Encephalitis, viral	5	20	27	Claytan, Palk, Winneshiek
Erythema Infectiasum	0	262	0	
Gastraenteritis (GIV)	1902	14125	12686	Scattered
Giardiasis	54	344	420	Scattered
Hepatitis, A	4	39	44	Dubuque, Jahnsan
Hepatitis, B	4	76	79	Palk, Scatt
Hepatitis, Nan A-B	2	25	14	Clintan, Jahnsan
Hepatitis type unspecified	0	1	7	
Herpes Simplex	118	1097	993	Scattered
Herpes Zaster	0	0	0	
Histaplasmasis	2	20	19	Dubuque, Jahnsan
Infectiaus mananucleasis	35	200	147	Scattered
Influenza, lab canfirmed	0	247	169	
Influenza-like illness (URI)	3699	77195	31396	Scattered
Legianellasis	1	13	12	Jahnsan
Malaria	0	1	2	
Meningitis				
aseptic	6	43	44	Scattered
bacterial	10	77	111	Scattered
meningacaccal	0	11	8	
Mumps	9	36	16	Scattered
Pertussis	1	19	28	Des Maines
Rabies in animals	14	163	134	Scattered
Reye Syndrame	0	0	4	
Rheumatic Fever	0	6	4	
Rubella				
(German measles)	0	1	1	
Measles	0	134	0	
Salmanellasis	52	258	247	Scattered
Shigellasis	5	19	18	Scattered
Taxic Shack Syndrame	0	8	9	
Tuberculasis				
tatal ill	6	46	49	Jahnsan, Pacahantas, Palk, Paweshiek, Scatt
bact. pas.	5	42	46	Jahnsan, Pacahantas, Palk, Paweshiek, Scatt
Typhaid Fever	0	1	3	
Venereal diseases:				
Ganarrhea	452	3338	3631	Scattered
Chlamydia	238	2169	26	Scattered
Syphilis	2	8	18	Palk

News About Colleagues

ABOUT IOWA PHYSICIANS

NEW IOWA DOCTORS

Dr. Marilyn W. Hines recently joined **Drs. Robert E. Hedican, Stephen L. Bloom** and **James A. Snyder** in the practice of obstetrics and gynecology in Waterloo. Dr. Hines received the M.D. degree and completed her obstetrics and gynecology residency at the U. of I. College of Medicine. . . . **Dr. Robert Donnelly** has joined Medical Associates in Clinton. Dr. Donnelly received the M.D. degree at the U. of I. College of Medicine and served his obstetrics and gynecology residency at Medical College of Ohio in Toledo. . . . **Dr. Gregory Bartel** began family practice in Eldora in August. Dr. Bartel received the M.D. degree at the University of Minnesota School of Medicine in Minneapolis and completed his family practice residency at the Sioux Falls Family Practice Center. . . . **Dr. Lou Ann McStay** began family practice in Avoca in August. Dr. McStay received the M.D. degree at the University of Pittsburgh in Pittsburgh, Pennsylvania and completed her family practice residency at Beaver Medical Center in Beaver,

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Pennsylvania. . . . **Dr. Paul M. Sunde** has joined the McFarland Clinic in Ames. Dr. Sunde received the M.D. degree at the U. of I. College of Medicine and served his family practice residency at Poudre Valley Hospital in Fort Collins, Colorado. Dr. Sunde will be located at the new McFarland Clinic in Slater. . . . **Dr. William L. Peterson** has joined the Park Clinic in Mason City. Dr. Peterson received the M.D. degree at the University of North Dakota and took 5 years of postgraduate work at the University of Nebraska Medical Center in Omaha and the University of Pittsburgh Hospitals in Pittsburgh.

DEATHS

Dr. George D. Jenkins, 82, Burlington, died August 24 at the Burlington Medical Center. Dr. Jenkins received the M.D. degree and served his urology residency at U. of I. College of Medicine. He was a past president of the Iowa Urological Society, Des Moines County Medical Society, Mercy and Burlington Hospital medical staffs and life member of the Iowa Medical Society.

Dr. Hubert H. Burroughs, 78, former Sioux City physician, died September 5 at his home in Capitola, California. Dr. Burroughs received the M.D. degree at the University of Pennsylvania School of Medicine. Prior to locating in California, he practiced in Sioux City for almost 40 years. Dr. Burroughs was a member of the American Academy of Family Physicians.

Dr. Ilse E. Bruehsel, 69, Warsaw, Illinois, died September 27 at Keokuk Area Hospital. Dr. Bruehsel received the M.D. degree at the University of Cologne, Cologne, West Germany. In 1949, she came to the United States and following postgraduate work in Philadelphia located in Warsaw, Illinois. Dr. Bruehsel was one of the first elected delegates to the World Health Organization's inaugural meeting in Rome in 1961 and served as American Medical Association representative at World Health meeting in the Philippines in 1966. She was a past president of the Hancock County Medical Society and former chief of staff at St. Joseph's Hospital in Keokuk.

Dr. George M. Ellison, 83, Clinton, died October 14 at Jane Lamb Health Center in Clinton. Dr. Ellison received the M.D. degree at U. of I. College of Medicine and interned at Milwaukee County Hospital in Milwaukee, Wisconsin. He began his medical practice in Clinton in 1934, retiring in 1978.

Dr. George H. West, Jr., 58, Mason City, died October 15 at his home in Clear Lake. Dr. West received the M.D. degree at Northwestern University Medical School in Evanston, Illinois; interned at Chicago Wesley Memorial Hospital in Chicago and served an internal medicine residency at Northwestern University Medical School followed by a fellowship in endocrinology at Cooke County Hospital in Chicago. Prior to joining the Park Clinic in Mason City, Dr. West was an instructor at Northwestern Medical School. He served as president of the Cerro Gordo County Medical Society; chairman of the Iowa Foundation for Medical Care; chief of staff and board member of North Iowa Medical Center; member of American College for Physicians and on several committees of the Iowa Medical Society.



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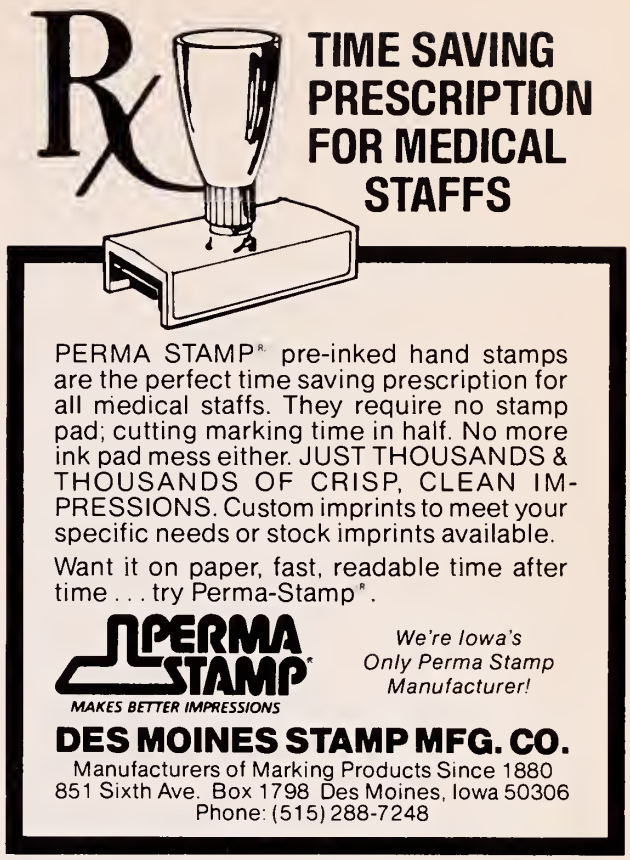
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A Monthly Commentary

IN THE PUBLIC INTEREST

Quackbuster

PILLS THAT MELT fat while you sleep. Coffee enemas that treat cancer. A black box that diagnoses any malady. Algae tablets that cure Alzheimer's. The incredible list of products peddled by today's high-tech snake oil salesmen goes on and on.

The absurdity of these remedies may be humorous; the reality of health fraud is not. Each year, Iowans waste $25 million on quack products and services readily available through mail order or in the offices of health fraud hucksters.

John Renner, M.D., is at the forefront of the fight against health care chicanery. Founder of the Kansas City Council Against Health and Nutrition Fraud and Abuse, Dr. Renner keynoted the recent Health Fraud Conference in Des Moines.

"There is no stereotype of the individual who can become a victim of quackery," says Dr. Renner, who has infiltrated several conventions of health care con artists. "Quackery can be perpetrated by members of all medical professions." (Dr. Renner says even America's medical doctors are not immune from practicing quackery. He estimates 3-4% have "gone off the deep end" in promoting various bizarre treatments or remedies.)

According to Dr. Renner, America's elderly figure prominently among victims of health fraud. However, no group is immune. Annually, Americans spend $44 *per capita* on health quackery, compared to $4.40 on cancer research.

Dr. Renner says "quackateers" are bombarding the public with misinformation about medications, nutrition and conventional medical treatments.

"They use a lot of literature promoting health and nutrition nonsense. They can't make outright claims, but they can make 'therapeutic inferences' about their products.

Quackery, he adds, often fills a void inadvertently left by the mainstream medical community. In these cases, the bait is hope.

"Patients who are told their situation is hopeless often turn to quacks. They offer a cure or a treatment for an incurable condition."

Even more tragic are people who delay seeking conventional treatment because they have been bamboozled by a huckster.

"This is when the snake oil salesman stops being funny and becomes dangerous," Dr. Renner comments.

Dealing with health fraud is especially difficult because the victims have a tendency not to complain. They are too embarrassed over having believed the con man's fantastic claims.

"Your family physician is the last person you would admit this to," Dr. Renner states.

While the Iowa Attorney General's office is stepping up prosecution of quackateers, Dr. Renner believes physicians can do their share to help curb health fraud. He advises professional organizations to be very careful about people they invite as speakers. He urges physicians to question patients about treatments or pills they may have tried. He asks physicians never to tell patients there is no hope.

The focus of Dr. Renner's suggested remedy for health quackery is patient education.

Physicians who encounter suspected health fraud or quackery are urged to contact the Consumer Protection Division of the Iowa Attorney General's Office, State Capitol, Des Moines, 50319. 515/281-5926

December 1986

Iowa Medicine

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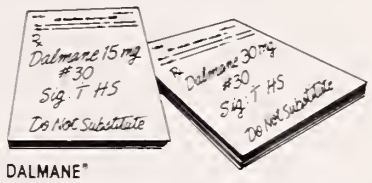
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Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase; and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

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